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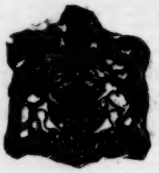

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The Samuel Hyde Memorial Lectures

ON

THE PLACE OF CLIMATOLOGY IN MEDICINE.

Delivered before the Section of Balneology and Climatology of the Royal Society of Medicine on May 20th and 21st, 1913,

BY WILLIAM GORDON, M.A., M.D. CANTAB., F.R.C.P. LOND.,

PHYSICIAN TO THE ROYAL DEVON AND EXETER HOSPITAL, ETC.

LECTURE II.[1]

Delivered on May 21st.

THE PRINCIPLE OF APPROXIMATE ISOLATION OF INFLUENCES.

ILLUSTRATION I.—THE INFLUENCE OF RAIN-BEARING WIND ON THE PREVALENCE OF PHTHISIS.

DR. PARKES WEBER AND GENTLEMEN,—My first illustration of the value of the "principle of approximate isolation of influences" must be drawn from my own work. I shall deal with it very briefly as it has been so fully discussed elsewhere. I cannot exaggerate the feeling of security one gains from it in climatic investigation. In addition to the factors of climate, which I have already enumerated, there are a number of other influences which have to be eliminated. These are set forth in the second half of Table I. They were dealt with as follows.

Race has undoubtedly a very strong influence on phthisis, and to eliminate it only populations of the same race were compared with one another. With regard to *sex*, female death-rates for several reasons afford a better criterion than male, and only female death-rates were used when possible. *Occupation* has a marked effect, and therefore localities where special industries were almost universal were excluded from consideration. To eliminate *density of population* town and country were not compared with one another. To get rid of the effect of *preventive measures against the disease*, the figures referring to periods previous to the introduction of these were used when possible, where preventive measures had been adopted. *The progressive change in prevalence with lapse of time* was prevented from introducing error by the comparison of only contemporary records. The other influences were shown to be so much less powerful than that of rainy wind that, where they could not be separately investigated, they might rightly be regarded as most unlikely to introduce error.

ILLUSTRATION II.—THE HIGH-ALTITUDE THEORY OF PHTHISIS IMMUNITY.

To illustrate the consequences of the neglect of this principle I have taken the work hitherto done on the "high-altitude theory of phthisis-immunity."

There is no more fascinating chapter in medicine than that which deals with altitude and phthisis. Its setting is superb. The most magnificent regions of the earth, some of the most famous, form the scenery. The names on its pages are amongst our most honoured. It ranges over the most diverse climates and raises the most fundamental questions of climatology.

Originating in the vast valleys of the Andes, where from time immemorial consumptives from the coast have been restored to health, and where the natives were believed to be practically immune, the theory that altitude was in some way antagonistic to the disease was first announced to Europe by Dr. Archibald Smith in his writings from 1840 onwards. His statements were subsequently confirmed by Tschudi and by Guilbert, whilst evidence of similar rarity at almost equal altitudes was furnished by Jourdanet, from the high plateau of Mexico. German observers took up the idea at home, and endeavoured to show, at much lower elevations, a diminution in the prevalence of phthisis with increasing height. Brockmann and Fuchs in the Hartz, Virchow in the Spessart, Virchow and Brehmer in the Silesian valleys, von Corval in Baden, and Merbach in Saxony, are all said by Hirsch to have made this diminution probable. In Switzerland, dealing with altitudes more comparable to those of the Andes and over a much larger area, Lombard, Müller, and others published statistics of the greatest interest.

Sir Hermann Weber was one of the first to test the value of both Alpine and Andean stations, and the remarkable success which he reported, especially from the Andes, drew general attention in this country. The late Dr. Theodore Williams furnished striking evidence of the value of the Swiss stations in the treatment of early cases, but was one of the first to throw doubt on the truth of the theory. This doubt has been increased by the discovery that in cities like Quito, formerly said to be almost immune, consumption is common, and the recent results of sanatorium treatment at low levels have (not quite logically) diminished the belief that altitude has anything to do with either the prevalence or the course of the disease. The general failure of the Himalayas as a health resort in consumption, even at heights of over 6000 feet, contributes to the increasing doubt, and it might almost be said at the present time that the high altitude theory is moribund. But it is by no means dead, and as lately as 1906 the late Dr. Huggard of Davos, in his Handbook of Climatic Treatment, quoted a table published in 1895 by the sanitary department of the Grisons. The summary of this table (Table IX.) seems to show very clearly a decrease of phthisis incidence with increasing height. To it, and to the arguments adduced in the extensive literature which preceded it, no satisfactory answer has hitherto been given. It is such an answer that I am now endeavouring to provide. *I propose to show that no valid evidence exists that altitude, per se, has any influence upon the prevalence of phthisis.*

But it is necessary at the outset to lay down certain limitations. First, no one now claims that any altitude confers an absolute immunity from phthisis; that, therefore, needs no discussion. Secondly, the earlier statements as to the rarity of the disease in crowded cities at great heights have been shown to hold true no longer—if, indeed, they ever were correct. They will, therefore, not be now considered, except very briefly as follows. At Mexico, Jourdanet never claimed more than a relative rarity as compared with the coast and placed the death-rate at 2·1 per 1000, and Le Roy de Méricourt gave it at 4·7. In Bogota, according to Restrepo, and at Quito, according to Jacoby, phthisis enters largely into the mortality lists. This is remarkable, seeing that in 1878 Gayrand and Domec, writing of Quito, said "our personal experience allows us to affirm that phthisis is so rare that we may say it does not exist there, at least as a malady originating locally. ..... The fact is then indisputable for us ..... one does not become phthisical at Quito" (Hirsch). Restrepo gives details which perhaps throw light on this remarkable statement. At Bogota about 50 per cent. of the cattle coming from the lower country are tubercular and the diseased parts are eaten by the very poor. It is amongst these very poor that the disease is common and the form of the disease is peculiar. The intestines are always affected and, in the lungs, the apices are not oftener attacked than other parts. There is little tendency to the formation of cavities or of fibroid tissue, and the symptoms differ strikingly from those of phthisis as we know it. With a very chronic course, a usually subnormal temperature, no night sweats, very rarely cough, sputum, or hæmoptysis, the picture presented is one of intractable diarrhœa, digestive troubles, and emaciation. Such a disorder would scarcely have suggested pulmonary consumption to observers who in 1878 knew nothing of the tubercle bacillus. But their mistake must render us cautious in accepting the earlier views. Restrepo's account, however, by no means disproves a real rarity of ordinary phthisis from inhalation of the human form of the bacillus.

Lastly, a sharp distinction must be drawn here, as in all investigations of the climatic relations of tuberculosis, between an influence on prevalence and an influence on course. I am only here discussing the influence on prevalence. These separate influences have, I think, been too much intermingled in discussing the altitude theory—as the brief outline of its vicissitudes has indicated. It might perhaps be expected that places where phthisis is exceptionally rare would be generally beneficial to imported cases; yet this is by no means true. In tropical countries, away from the crowded towns, consumption, though rare, is usually rapid in its course; and in the

[1] Lecture I. was published in THE LANCET of June 14th, 1913, p. 1643.

Peruvian Sierra Archibald Smith has carefully indicated localities where, though phthisis was practically non-existent amongst the natives, the developed disease did badly. The converse proposition, however, that places where phthisis is exceptionally common might be expected to prove unfavourable to imported cases, seems to have more to be said for it. I know of no place where consumption is rife yet where imported cases do well. In dealing, therefore, with altitudes, such as the Himalayas, where it is particularly difficult to obtain direct evidence regarding the prevalence of the disease, it may be held permissible, in absence of direct information (always remembering the uncertainty of such reasoning), to make use of authoritative statements as to their effect upon its course. Otherwise I shall confine all I have to say strictly to the influence on prevalence.

I shall deal first with the Andes, not merely because the theory arose there, but because the climate is in several respects unique; secondly, with the Swiss Alps, where the most important work has been done on the subject; thirdly, with the German uplands and other European elevations; then with the Himalayas and other Indian altitudes; and finally, with the tablelands of South America, of South Africa, and Persia.

I must again point out that Koch's discovery of the tubercle bacillus in 1882 has made a landmark in the history. Before 1882 diagnosis was definitely more doubtful than it has since become, and instances will be noticed in which serious misstatements have consequently arisen—in fact, one such has probably been already mentioned, since it is unlikely that the frequency of pulmonary tuberculosis now recognised amongst the poor of Quito is of only recent development. Some of the statements date back to the first half of last century, and it might be held that such antiquated opinion should be altogether neglected. But, as it forms part of the existing argument, and as it may be justly urged that phthisis has so long been a clinically well-recognised disease, not usually mistakable at its actual termination, this can scarcely be done. In all cases, however, I shall qualify my information by adding its date.

The Andes.

There can be no doubt that the Peruvian Andes, in the latitude of Lima, present a striking contrast to the adjacent coast in relation to phthisis prevalence. Dr. Campodonico says in a valuable letter written to me in 1905: "In Lima the death-rate from tuberculosis is very high, as is seen from the enclosed statistics" (it was 7·7 per 1000 in 1904); but "it is perfectly true that the inland plateaux of Peru are almost absolutely free from phthisis."

It must also be borne in mind (it is proper to allude to this here) that, correctly or not, the claims made for the valley of Jauja as a sanatorium for phthisis considerably exceed any claims which have been advanced elsewhere. Whereas in Lima the disease runs a rapidly fatal course, at Jauja, at an elevation of about 10,000 feet, Dr. Fuentes stated in 1858 that over 79 per cent. of the patients recovered, and, of the recoveries quoted by Sir Hermann Weber in the paper I have referred to, some of the most remarkable took place in these mountains. We have thus definitely in this part of Peru a remarkable contrast between adjacent lowland and highland in respect of the relation to phthisis. It remains to be decided upon what peculiarity this contrast depends.

In the first place, it must be observed that the climatic contrast is equally pronounced. Lima is only 565 feet above sea level in a climate by no means usual in the tropics, sheltered by the Andes from the south-east trades and very damp but almost rainless, and chilled by the great Antarctic current which, running northwards along the Pacific coast and carrying, from Southern Chili to some distance north of the equator, a vast body of cold water, cools the atmosphere of both sea and land and frequently covers both with a roof of cloud.

For more than half the year—says Mr. Bryce—Lima has a peculiar climate. It is never cold enough to have a fire, but usually cold enough to make you wish for one. It never rains, but it is never dry; that is to say, it is not wet enough to make one hold up an umbrella, yet wet enough to soak one's clothes. September was as dark as a London November and as damp as an Edinburgh February, for the fog was of that penetrating and wetting kind which in the case of Scotland they call a "haar." For the other half of the year there is tropical heat. When to this we add that this climate is very enervating, that the inhabitants are remarkable for their effeminacy and delicacy of constitution, the men especially, with their contracted chests, who find shaving and washing the face in cold water sufficient to cause catarrh (!); that the city is a large one containing over 100,000 inhabitants, of all sorts of races; that the death-rate from all causes in 1840 was about three times that of London or Manchester, and was over 35 per 1000 in 1903, it need cause no surprise that the tuberculosis rate is a high one.

On the other hand, the climates and conditions to which Dr. Archibald Smith specially drew attention are entirely different. As it is necessary to be precise, I must quote his own statements as they stand.

> Certain states of the air of the atmosphere, depending on different degrees of altitude, appear to be either hostile or favourable, according to the particular locality in which the patient happens to reside. ..... Thus on the coast it is a common disease, but on the intermedial mountains and in the temperate valleys of the interior it is rare.

He elsewhere carefully refers to the "deep warm glens of the interior" as the favourable localities.

> Huarriaca is in climate very like Obrajillo, on the western slope of the Andes [elsewhere he says that Obrajillo is in a hollow locked in by hills], and in one of those recesses in the Andine glens and defiles very productive of maize, &c., &c. Such indeed are the marked localities, blessed with a steady temperate climate and a dry air of about 60 degrees Fahrenheit in the shade as well as sunny cheerful sky throughout the greater part of the year. Such are the localities where phthisis proper, or tubercular disease of the lungs, is only known as an exotic. ..... The sky of the dry intermediary valley ..... is generally throughout the whole year remarkably pure, bright, and serene.

Of Jauja he says: "With a sky always bright and sunny and an atmosphere pure and bracing which invites to out-door exercise and enjoyment." In confirmation of Smith's statements Campodonico writes of the territory of Junin where "Tarma, Jauja, and Huancayo are situated."

> These towns, protected as they are by the lofty range of the Andes, which deflect the trade winds, can hardly be said to have any regular winds. The climate is very dry, although the rainfall reaches a high point in the months of December, January, and February, when sudden and frequent showers occur, the water dries away rapidly—iron tools are very rarely oxidised.

He attributes the rarity of phthisis to several causes; for instance, "dryness of the air, the effectual Andean screen sheltering from humid southern winds, sparseness of population, with a consequent less pollution of the air." It must also be noticed that the towns are small and that the occupations of the people are pastoral and agricultural, "the harvest being home, the rural population rest from their agricultural labour for eight months in the year, which they give up to amusement and feasting."

Dr. Theodore Williams carefully described the valley of Jauja:—

> The valley of Jauja is a plauteau 44 miles long and 17 wide, separating the two ranges of Andes ..... entirely drained towards the east by the Mantaro. ..... The soil is alluvial with a calcareous substratum. The year is made up of two seasons—the dry season, which is the coldest, extending from March to August, in which last month frost occurs, and the rainy, called the winter, which is the hottest, extending from September to February. Thunderstorms occur in January and February, and wind is most felt in July and August—i.e., one observes it in the dry season. ..... The climate does not admit of great extremes and the thermometer falls sometimes to 28° Fahr., seldom rising much above 57° Fahr. (in shade). The sun's rays are powerful and so great in their direct influence that in the full sunshine the temperature may be 122° Fahr. and in the shade 50° Fahr. The atmosphere is very clear, partly on account of rapid evaporation, and partly because of the rapid drainage by the river Mantaro. Iron and steel are stated never to rust, and such is the transparency of the atmosphere that stars are seen by day. The prevailing winds are south-west in the evening and the north-east in the morning, and occasionally they blow sufficiently to cause a tempest.

It should be observed that at the silver mines of Pasco over 14,000 feet above sea level, "with a wet season like a Scotch winter and, though in the dry season, it shines brightly and warmly at noon, yet in the shade the air is chillingly cold and the nights always frosty," although imported cases did not improve, Smith only once in a year's residence met with a case of hæmoptysis.

In a most interesting account of Bolivia kindly sent me six weeks ago by Dr. Ramsay Smith, British Consul at Orura (to which I trust to do fuller justice in a future paper), he emphasises the extreme rarity of any sort of tuberculosis amongst those born and bred in his district, which lies about 12,000 feet above sea level.

It should be noted that no one has tried to show, so far as I am aware, any *increasing* rarity with increasing altitude in the Andes. The optimum height for treatment is stated to be between 5000 and 10,000 feet.

Now race cannot account for the difference. For instance, Campodonico tells me "that inlanders may easily contract tuberculosis when they leave the tableland of the Andes and come to the coast; in fact, on the coast of Peru the largest tribute to mortality from tuberculosis is paid by them." So also the chest enlargement on which stress has elsewhere been laid affords here no adequate explanation, since these inlanders exhibit it. Differences in occupation and in density of population may go far of themselves to account for the difference of prevalence. For in the sheltered tableland of Kashmir Dr. Arthur Neve tells me that whereas in the insanitary, overcrowded city of Srinagar phthisis "is not rare," "it is almost unknown" outside it. In Kashmir no great difference of altitude enters into the problem, yet the contrast between town and country is apparently the same.

When we add together differences in climate which produce an enervated, delicate, and narrow-chested population in Lima, and a healthy broad-chested people in the Sierra; between a very damp and a very dry climate; between a sky overcast for half the year and the nearly continuous brilliancy of a tropical sun, through a most diaphanous atmosphere; between conditions which are described by Archibald Smith as depressing to appetite and hindering to digestion, and conditions which he found to be exactly the reverse—differences, moreover, whose effects we have been afforded no means of separately estimating and eliminating; it is clear that we cannot assert that the lesser prevalence on the heights is in any direct way determined by mere altitude.

The Andean valleys, indeed, present an almost unique climate—well within the tropics, only about 12° from the equator, yet singularly equable and temperate, with a remarkably dry, still atmosphere, with the disinfecting presence of great intensity of light, yet without the excessive shade temperature which incubates bacilli; and when we add to these conditions sparseness of population and pastoral and agricultural occupations, with no overwork and with healthful outdoor life, we shall find little difficulty in explaining even a unique rarity of phthisis within them without invoking altitude or its equivalent in diminished barometric pressure to account for it.

In short, the Andean valleys described by Archibald Smith furnish no valid evidence in favour of the theory he propounded. As regards the therapeutic effect of these altitudes, the mere reduction of temperature from that of the tropics for part of the year on the coast to that of temperate climates in the Sierra must be an agent of immense importance.

The Swiss Alps.

The work done in Switzerland was the most important in Europe. The altitudes dealt with were great, the area extensive, the material carefully scrutinised, and the methods used more thorough than elsewhere. I shall therefore discuss it in some detail.

Dr. Lombard, of Geneva, in his charmingly lucid "Climats de Montagnes," stated that at the higher inhabited altitudes in the Alps phthisis was comparatively rare. "I have shown," he wrote in 1873, "that the rarity of phthisis on the heights is an indisputable fact," and later on, "One may take it that phthisis is almost unknown above 2000 metres." But he insisted on a very interesting and important point which Hirsch has not noticed—viz., that at intermediate heights a belt of increased phthisis normally exists, a "*phthisis zone*," above and below which the disease is less prevalent, a zone placed, he thought, approximately between 1300 or 1600 feet and about 3000 or 4000 feet of altitude. It was also, he found, a zone of greater frequency of "scrofula." This belt roughly corresponded with another belt of increased humidity, greater rainfall, damper soil, more mist and cloud, and more frequent thunderstorms, which reached, he said, from about 1600 or 2000 feet above sea-level to about 3000 or 5000 feet. He also described a belt of forest and meadow in which herbaceous and arborescent plants took on more luxuriant growth, stretching from about 1600 feet to about 6000 feet.

Now, this point of a "phthisis zone," if correct, is of the greatest moment, as it at once casts doubt on all the work which has been done at levels which do not reach its higher limit. Thus Lombard goes on to say:

> But is this so (the lessening of phthisis prevalence) for all mountain regions? We do not think so, and we shall see that, if a belt exists where phthisis is nearly completely unknown, there are other regions where the disease acquires a degree of frequency much greater than that observed in the surrounding plains.

A large number of papers, he tell us, exist to show this. Dr. Locher-Balber found tubercular disease twice as common in the mountain districts of canton Zürich as down by the lake. He makes the interesting statement that a Dr. Mansford published in 1818 a work intended to show that in England phthisis patients were more numerous in proportion as their dwellings were more elevated, a conclusion which my own observation bears out, when the localities examined are exposed to westerly winds. Lombard explains the apparent contradiction by pointing out that the localities quoted were within the belt of increased phthisis mortality. My observations would suggest that the increase of their phthisis death-rate was due to their elevation increasing their rainy wind exposure.

And here it will be well to glance at the climatic influences exerted by mountains and to try to get some rational notion of how mere altitude might act upon the prevalence of phthisis. The feature which presents the greatest regularity with increase of altitude is decrease of barometric pressure, and this has been supposed by some to be the factor which tends to produce a relative phthisis immunity. Roughly speaking, at 6000 feet the air pressure is about 25 per cent. less than at sea-level. At that level the effect of the decrease in oxygen pressure becomes noticeable to the newcomer, and a condition which Jourdanet named anoxyhæmia develops. To compensate for this a rapid increase of hæmoglobin and red corpuscles occurs, so that Viault, who investigated it in Peru, found that in two weeks his red corpuscles increased from 5 to 7 millions per cubic millimetre and in another week to 8 millions. The amount of iron in the blood rose in the ratio of 4 to 7. Also the chest measurements increase, so that the natives of these high altitudes have larger chests than those who live below. Both of these compensatory changes have been given as explanations of the supposed immunity.

With increasing altitude the intensity of insolation also increases, so that at the summit of Mont Blanc the intensity of solar radiation is 26 per cent. greater than at the level of Paris, and a marked increase in the intensity of the ultra-violet rays exists at great altitudes and an increase in the chemical effect of sunlight. Nevertheless, the air temperature falls and both annual and daily range of temperature considerably diminish, the climate therefore becoming cooler and more equable.

An intermediate belt does exist, such as Lombard described, of greater humidity, rainfall, and cloud. In the tropics this is at an altitude of between 1300 and 1600 metres. In higher latitudes it varies with the season, in winter being lower, in summer higher. The rainfall increases with the increasing altitude up to a certain point, at which it again decreases. It should be borne in mind that the central mountains of Germany and those of England are below the altitude above which the rainfall lessens. In the north-west Himalayas, Hill found the zone of maximum rainfall during the monsoon was about 1270 metres above sea level, and if the rainfall on the plains be taken as 1, the amount in this maximum zone was 3·7, but at 3000 metres only 0·2. Season considerably modifies the position of these zones.

That increased chest capacity does not prevent phthisis we have already learnt from Dr. Campodonico's statement, as well as from general experience of relapses on patients leaving higher levels. The increase in red corpuscles and hæmoglobin might conceivably tend to hinder the development of phthisis; the increased solar radiation, and especially of the ultra-violet rays, would destroy bacilli exposed to them, and at great heights the dryness of the air should be prophylactic. On the other hand, the zone of increased rainfall and cloud would have the contrary effect. The proof, however, here, as always, must depend not on theoretical expectation but on ascertained facts.

In 1863 a Commission was appointed by the Swiss Natural Science Society to investigate the distribution of phthisis in Switzerland, with a view to determining the influence of altitude. The five years 1865 to 1869 were selected as the period of observation. Dr. Müller of Winterthur acted as secretary. In his careful and elaborate report Müller points out that the period of observation chosen was too short. It was, however, the utmost possible, and in many places—indeed, in some entire cantons—it was found unattainable, returns being only procurable for four, three, or even two years. Moreover, the figures, he says, were not free from omissions and errors, though he indicates those which he thinks definitely open to doubt. Great pains were clearly

taken to make the best of the materials, and the statistics were drawn from a very wide area and great population. This report, therefore, is entitled to the most attentive consideration. We shall see that it does not prove that phthisis prevalence necessarily diminishes as altitude increases.

Müller eliminates the disturbing influence of occupation, which obviously greatly affected the death-rates, by grouping the localities as "industrial," "agricultural," and "mixed," and by considering each separately. Table V. gives the

TABLE V.—*Death-rates from Phthisis at Successive Altitudes in Switzerland (Müller) per 1000 per annum.*

Altitude in metres.	Altitude in feet.	Industrial districts.	Mixed districts.	Agricultural districts.
200- 499	656-1639	2·7	1·85	1·4
500- 699	1640-2296	3·0	1·55	1·2
700- 899	2296-2951	1·35	1·7	0·7
900-1099	2952-3608	1·5	1·9	0·7
1100-1299	3609-4264	2·3	2·3	0·7
1300-1499	4265-4920	—	1·4	0·6
Over 1500	4921-5905	—	1·3	0·7

relation of phthisis to altitude in each of these groups. The industrial districts do not seem to prove any relationship, nor do the agricultural districts above the height of 700 metres (about 2300 feet). But the "mixed" cantons might be held to suggest a relation (if we assume that Lombard was right in his opinion about an intermediate belt of greater mortality and therefore neglect the heavier and increasing death rates between 700 and 1300 metres).

But Müller further provides another set of statistics (which Hirsch has overlooked) eliminating a source of error, which in Switzerland, where so many of the inhabitants go to other countries to work and return home when ill, is particularly liable to mislead—viz., the inclusion of cases which originated elsewhere. Table VI. embodies these

TABLE VI.—*Müller's Table after Omission of Imported Cases.*

Altitude in feet.	Industrial districts.	Mixed districts.	Agricultural districts.
656-1639	1·8	1·4	1·2
1640-2295	2·1	1·2	1·1
2296-2951	—	1·3	0·6
2952-3608	1·3	1·3	0·5
3609-4264	2·2	1·1	0·7
4265-4920	—	1·0	0·6
4921-5905	—	0·8	0·7

figures. Here again the industrial districts give no definite indication, and the agricultural above 700 metres show no signs of decrease, but the "mixed" districts suggest even more strongly than before a decrease with increasing altitude, except for a passing increase between 700 and 1100 metres. It must, however, be remembered that of the three groups the most indefinite as regards occupation is the mixed, for the amount of industrial occupation, of course, varies from place to place.

There is, however, another powerful influence which has to be taken into account, of which Müller was not aware—viz., the influence of prevalent rain-bearing winds. These are the north-west, west, and south-west for the greater part of Switzerland, with perhaps the south-east for the lower valleys which run down into Italy. Of the westerly winds the chief rainy wind appears, throughout central Europe, to be the north-west.

To examine the effects of these winds I have constructed from Müller's work Tables VII. and VIII., excluding all towns of more than 10,000 inhabitants (in order to lessen error from density of population), all districts where a hospital was said to exist, all where the period of observation had been less than five years, and all where the number of cases really of local origin could not be determined. Here again the agricultural group over 700 metres shows no signs of a decrease in phthisis with increase of height, whilst both the "mixed" and industrial groups indicate an *increase* of phthisis, which in the latter is actually progressive over 500 metres. On examining the individual places as regards their exposure and shelter from westerly winds we see at once an easy explanation of a greater death-rate at lower levels where it occurs; below 700 metres the proportion of places exposed is considerably greater than that above. It becomes, therefore, clear that the apparent influence of altitude may be readily explained as an indirect effect of wind exposure or shelter. The industrial districts happen to be almost all exposed, and increasing height merely carries them into regions of greater wind and rain; the "mixed" districts vary in death-rate apparently from the same cause; whilst the uniform lowness of death-rate in the agricultural localities of over 700 metres altitude seems to depend on their almost uniform shelter. Below 700 metres a considerable proportion of them are exposed, which accounts for their higher death-rates at the lower levels. It seems, in fact, as if, with increasing altitude, the increasing bleakness of the exposures had forced the inhabitants to build their villages in shelter, and the effect of this shelter in lowering phthisis death-rate had come to simulate a diminution in the prevalence of the disease directly due to altitude.

These tables conclusively dispose, I think, of any reasonable claim that in Switzerland during the five years selected an influence of altitude on the prevalence of phthisis, apart from increased or decreased exposure to rain-bearing wind, could be discovered. We have, however, in Müller's report still further evidence in the same direction, below the upper limit which Lombard assigned to his belt of increased prevalence. I lay particular stress on it because of its antagonism to more northern statistics presently to be quoted. The canton of Zürich was one of the most satisfactory in the series, because its returns were for five years throughout and appeared to the reporter exceptionally trustworthy.

Table XIX. gives the 13 highest districts, the 10 lowest and the 15 districts with the least mortality from phthisis. It will be seen from these figures that in this canton, where elevation almost always means increased north-westerly exposure, increasing altitude is associated not with lower but with very definitely higher mortality from phthisis. The populations given lend no colour to an idea that density of population has a determining influence. Occupation, however, evidently has an effect, and, in fairness to the upholders of the altitude theory, one must protect them by precautions which all of them do not themselves adopt. Yet even when only agricultural districts are compared with each other it is seen that the lower localities still have the lower death-rates.

But we can deduce more from Müller's figures than a mere negation. It is plain that, in shelter amongst agricultural populations, increase of altitude has no evident influence on phthisis prevalence; but what about populations exposed to rain-bearing winds? Of these we have here no certain examples above the limit which Lombard sets to his humid zone. Up to that limit, however, the phthisis prevalence appears to actually increase as we ascend, and we may reasonably ascribe this increase to the increased incidence of rain-bearing winds, since in shelter the same humidity at the same height may reasonably be assumed to exist, although it created no increase in the phthisis death-rates.

We may, in fact, state our conclusions so far thus: 1. In shelter from rain-bearing winds there is no evidence of any influence of altitude on phthisis prevalence. 2. In exposure to rain-bearing winds the prevalence of phthisis appears to increase with increasing altitude within the limits of Lombard's zone of increased humidity and rainfall.

All the foregoing, however, is based on figures compiled before Koch's discovery in 1882. We now turn to the more modern and presumably more exact statistics published in 1895 by the Sanitary Department of the Grisons. It was held by the department to strongly support the idea that increasing altitude decreases the prevalence of tuberculosis. Three-quarters of the cases were pulmonary, and the figures may be reasonably dealt with as furnishing similar arguments for phthisis as for tuberculosis generally. For I have shown elsewhere that other forms of tuberculosis are affected by rainy-wind-exposure in much the same way as phthisis is, They express morbidities, not mortalities, and are therefore considerably larger.

The Grisons offers an exceptionally favourable field for investigating the question, as Müller had pointed out, since it provides such wide differences in inhabited altitude. Unfortunately, Müller had found it impossible to obtain satisfactory information from it. It also affords exceptionally marked contrasts of wind exposure and shelter. The west wind must be much broken and dried by its passage over the western Alps, the south-west seems only to gain free access to the Upper Engadine. The south-east may have some effect as a rainy wind on the highest villages of the valleys which run down into Italy. North-westerly winds probably affect the canton most. They are especially

TABLE VII.—*Being Müller's Table XVI. Modified as stated.*

X = Exposed to S.W., W., or N.W. Winds.
S = Sheltered from all of them.

District.	Canton.	Population.	Phthisis of local origin.		Exposure or shelter to westerly winds.
			Deaths in 5 years.	Annual death-rate per 1000.	
ALTITUDE 200–499 METRES (656–1639 FT.).					
Industrial.					
Mendrisio (town)	Tessin.	2,200	26	2·3	X S.W.
Zug (town)	Zug.	4,066	38	1·8	X W., N.W.
Diessenhofen (town)	Thurgau.	1,595	12	1·5	X ,,
Lenzburg (town)	Aargau.	2,297	15	1·3	? X W., S.W.
Coldrerio, Salorino	Tessin.	1,018	3	0·5	? S
Totals	... ...	11,176	94	Av. 1·6	
Mixed.					
Lachen...	Schwyz.	1,532	18	2·3	X N.W.
Sargans, Mels ...	St. Gallen.	3,997	39	1·9	X ,,
Cully (town) ...	Waadt.	1,089	8	1·4	X S.W.
Anières, &c.... ...	Genf.	3,472	24	1·3	X ,,
Liestal, Seltisberg	Baselland.	4,027	25	1·2	X N.W.
Lansen	,,	781	5	1·2	X ,, ?
Ormalingen, &c.	,,	1,199	6	1·0	S
Colombier, &c. ...	Neuenburg.	2,355	12	1·0	? X S.W.
Gelterkinden ...	Baselland.	2,198	10	0·9	S
Tenniken, &c. ...	,,	1,164	2	0·3	S
Sissach, &c.... ...	,,	3,087	4	0·2	S ½ ?
Totals	... ...	24,901	153	Av. 1·2	
Agricultural.					
Unterhallau ...	Schaffhausen.	2,370	30	2·5	?
Begnins, &c. ...	Waadt.	1,977	18	1·8	X S.W.
Erlach-Lüscherz, &c.	Bern.	2,684	23	1·7	X ,,
Maisprach, &c. ...	Baselland.	1,213	9	1·4	S
Jussy	Genf.	873	6	1·3	X S.W.
Wintersingen, &c.	Baselland.	753	5	1·3	½ S
Ins, &c....	Bern.	2,835	19	1·3	X S.W.
Walchwyl	Zug.	1,055	6	1·1	X N.W.
Basadingen	Thurgau.	2,095	10	0·9	X W., N.W.
Satigny...	Genf.	3,546	17	0·9	X S.W.
Andelfingen ...	Zürich.	5,851	19	0·6	?
Risch	Zug.	960	2	0·4	S
Arisdorf, &c. ...	Baselland.	1,097	2	0·3	S
Totals	... ...	27,309	166	Av. 1·2	
ALTITUDE 500–699 METRES (1640–2295 FT.).					
Industrial.					
Unterseen	Bern.	1,732	20	2·3	X W.
Bauma	Zürich.	2,939	27	1·8	? X N.W.
Totals	... ...	4,671	47	Av. 2·0	
Mixed.					
Meyringen	Bern.	4,739	46	1·9	? X W.
Diegten, &c. ...	Baselland.	1,623	13	1·6	?
Läufelfingen ...	,,	734	6	1·6	?
Neuheim	Zug.	700	5	1·4	X W., N.W.
Wenslingen... ...	Baselland.	634	4	1·2	X N.W.
Hutwyl (town) ...	Bern.	3,254	21	1·2	X ,,
Rümlingen, &c....	Baselland.	1,387	6	0·8	½X
Zeglingen, &c. ...	,,	1,245	5	0·8	½X
Totals	... ...	14,316	106	Av. 1·4	

TABLE VII.—(*Continued.*)

District.	Canton.	Population.	Phthisis of local origin.		Exposure or shelter to westerly winds.
			Deaths in 5 years.	Annual death rate per 1000.	
Agricultural.					
Ringenburg... ...	Bern.	1,123	14	2·4	X S.W.
Grandvaux	Waadt.	1,713	17	1·9	X S.W., W.
Bremgarten... ...	Bern.	2,125	15	1·4	X S.W.
St. Saphorin, &c.	Waadt.	2,868	20	1·3	X S.W., W.
Leissigen, &c. ...	Bern.	800	5	1·2	X N.W.
Kirchlindach ...	,,	809	5	1·2	X S.W.
Valle Capriasca ...	Tessin.	2,967	14	0·9	S
Wohlen...	Bern.	3,211	16	0·9	X S.W.
Gsteig	,,	7,418	33	0·8	½X S.W.
Rapperswyl... ...	,,	1,888	6	0·6	?
Totals	... ...	24,922	145	Av. 1·1	
ALTITUDE 700–899 METRES (2296–2951 FT.).					
No Industrial.					
Mixed.					
Menzingen	Zug.	2,248	33	2·9	X N.W., W.
Couvet	Neuenburg.	2,102	17	1·7	?
Oberoegeri	Zug.	1,905	6	0·6	S
Unteroegeri... ...	,,	2,492	3	0·2	S
Totals	... ...	8,747	59	Av. 1·3	
Agricultural.					
Arzier	Waadt.	358	4	2·2	X S.W.
Gimel, &c.	,,	1,823	12	1·3	?
Pfäffers'...	St. Gallen.	600	4	1·3	X N.W.
Trois Torrens ...	Wallis.	1,313	6	0·9	S
Dürrenroth	Bern.	1,408	6	0·8	S
Bassins, &c.... ...	Waadt.	912	3	0·6	?
Totals	... ...	6,414	35	Av. 1·09	
ALTITUDE 900–1099 METRES (2952–3608 FT.).					
Industrial.					
Sternenburg ...	Zürich.	1,038	11	2·1	X S.W., W., NW.
Les Bayards ...	Neuenburg.	958	9	1·8	X S.W.
Totals	... ...	1,996	20	Av. 2·0	
No Mixed.					
Agricultural.					
St. Georges, &c....	Waadt.	720	6	1·6	X S.W
Vättis	St. Gallen.	350	1	0·5	S
Boltigen	Bern.	2,010	6	0·5	S } if complete..
Frutigen, &c. ...	,,	5,224	15	0·5	S }
Lenk	,,	2,288	5	0·4	S
Weisstannen ...	St. Gallen.	471	1	0·4	S
Ayent. Vex.... ...	Wallis.	1,962	2	0·2	S
Totals	... ...	13,025	36	Av. 0·5	
ALTITUDE 1100–1299 METRES (3609–4264 FT					
Industrial.					
St. Croix	Waadt.	4,574	50	2·1	?
No Mixed.					
Agricultural.					
Reverelaz, &c. ...	Wallis.	273	7	5·1	? X N.W.
Agettes and Herémence ...	,,	1,368	1	0·1	S
Gsteig, &c.	Bern.	1,415	2	0·2	S (? if complete)
Totals... ...	... ...	3,056	10	Av. 0·6	

TABLE VII.—*(Continued.)*

District.	Canton.	Population.	Phthisis of local origin. Deaths in 5 years.	Phthisis of local origin. Annual death rate per 1000.	Exposure or shelter to westerly winds.
ALTITUDE 1300–1499 METRES (4265–4920 FT.). *No Industrial or Mixed. Agricultural.*					
Adelboden	Bern.	1,544	5	0·6	S (? if complete)
Nax, St. Martin	Wallis.	2,734	3	0·2	½ S
Totals	... ...	4,278	8	Av. 0·3	
ALTITUDE 1500 METRES AND UPWARDS (4921–5905 FT.). *No Industrial or Mixed Agricultural.*					
Champéry	Wallis.	548	2	0·7	S

TABLE VIII.—*Summary of Averages in Table VII.*

Height over sea-level in metres.	Phthisis of local origin. Average death-rates per 1000. Industrial.	Mixed.	Agricultural.
200– 499 (656–1639 ft.)	1·6	1·2	1·2
500– 699 (1640–2295 ft.)	2·0	1·4	1·1
700– 899 (2296–2951 ft.)	—	1·3	1·09
900–1099 (2952–3608 ft.)	2·0	—	0·5
1100–1299 (3609–4264 ft.)	2·18	—	0·6
1300–1499 (4265–4920 ft.)	—	—	0·3
1500 and over (4921–5905 ft.)	—	—	0·7

prevalent in summer, the time of the chief rainfall. The table published by the Sanitary Department (Table IX.) was, however, arranged in unequal divisions of altitude, and it was first necessary in examining it to arrange it in equal

TABLE IX.—*Issued by the Sanitary Department of the Grisons (1895).*

Number of communes.	Metres above sea.	Population.	Tubercular morbidity per 1000.
15	285– 599	20,369	12·48
40	600– 999	20,935	9·74
64	1000–1499	25,346	7·18
19	1500–1880	10,291	5·64

divisions. I did so in 200-metre divisions. (Table X.) So arranged, it by no means made clear a definite effect of altitude, and at each successive height pronounced exceptions were found to occur, which suggested some

TABLE X.—*The same Returns Rearranged at Uniform Intervals of 200 Metres.*

	Morbidity per 1000.
Places up to 600 metres high	12·08
,, from 601– 800 metres high ...	8·8
,, ,, 801–1000 ,, ,, ...	12·5
,, ,, 1001–1200 ,, ,, ...	7·1
,, ,, 1201–1400 ,, ,, ...	7·5
,, ,, 1401–1600 ,, ,, ...	4·2
,, ,, 1601–1880 ,, ,, ...	8·6

more potent influence in operation. It seemed possible that this influence was that of rain-bearing wind.

To ascertain whether rain-bearing winds had any influence on the figures given, a table was constructed showing the tuberculosis morbidity in places exposed to various winds, and it at once became obvious that a higher rate accompanied exposure to any westerly winds. (Table XI.)

TABLE XI.—*Tuberculosis in the Grisons. Summary as regards Shelter and Exposure.*

Shelter and exposure.	Population.	Tuberculosis morbidity per 1000.
Sheltered from all	18,734	5·3
Exposed only to W.N.W., N.W., or N.N.W. ...	9,256	13·2
,, N. or N.E.	6,043	6·9
,, E.N.E., E., or S.E.	6,173	5·8
,, W.	230	14·2
,, S.W. or W.S.W.	118	19·7

It should be observed that the populations exposed to W., S.W., and W.S.W., are very much smaller than the others.

Another table was drawn up of localities with morbidities under 5 per 1000 and over 10 per 1000. The localities with lower rates were then seen, with few exceptions, to be sheltered from all westerly winds, whereas those with the higher rates were, with two exceptions, exposed to one or other of them. The winds causing increased frequency of tuberculosis were generally north-westerly. So another table was drawn up comparing at each altitude the morbidities in the populations sheltered from north-westerly winds with those exposed to them. The result was very remarkable. (Table XII.)

TABLE XII.—*The N.W., N.N.W., and W.N.W. Winds. Effect of Exposure to, and Shelter from, them at Various Heights (Summary).*

Altitude in metres.	Altitude in feet.	Fully exposed to N.W. Population.	Fully exposed to N.W. Morbidity per 1000.	Fully sheltered from N.W. Population.	Fully sheltered from N.W. Morbidity per 1000.
Up to 600	1968	14,039	14·4	4874	5·3
601– 800	—	1937	12·4	4004	5·2
801–1000	—	199	25·1	2369	6·3
1001–1200	—	260	19·2	7212	5·6
1201–1400	—	2092	15·3	5237	2·4
1401–1600	—	270	18·5	8273	3·8
1601–1880	5250–6160	0	—	4966	8·6

It should be observed that the exposed populations at 801–1000, at 1001–1200, and at 1401–1600 metres are very small.

At every level the exposed populations suffered far more (twice to seven times as much) from tuberculosis as the sheltered. And one other important fact also became obvious—viz., that as altitude increased a greater proportion of the people tended to live in places sheltered from these winds, as if the exposures become too bleak for habitation. In neither exposed nor sheltered places was there evidence that altitude lessened the morbidity; on the contrary, in exposure the effect of altitude was not to lessen, but to increase it.

The incidence of westerly winds, therefore, not altitude, appeared to chiefly determine the distribution of the morbidity. To make quite sure, however, a table was made out showing the morbidity at successive heights in places sheltered from all westerly winds and from the south-east. (Table XIII.) From this table the conclusion seems

TABLE XIII.—*Sheltered from all Westerly Winds and from Sirocco (Summary).*

	Morbidity.	Population.
Up to 600 metres	3·9 per 1000	2898
601– 800 ,, ...	4·7 ,,	3173
801–1000 ,, ...	4·1 ,,	971
1001–1200 ,, ...	2·8 ,,	4254
1201–1400 ,, ...	2·3 ,,	5059
1401–1600 ,, ...	4·9 ,,	3693
1601–1880 ,, ...	6·7 ,,	3538

inevitable that altitude of itself has little influence, if any, and only acts indirectly, in exposed places, by increasing the exposure. In fact, from these tuberculosis morbidities in the Grisons we arrive at precisely the same conclusions as from Müller's phthisis mortalities, of 30 years earlier, dealing with other cantons.

It should be noted that we have in these later statistics no means afforded us of eliminating errors due to imported cases, or to differences of occupations as we had in Müller's report. In my study of the district, the shelters and exposures were deduced with great care from the contoured Swiss Government survey maps, kindly lent me by the late Dr. Huggard.

As to Dr. Lombard's humid belt, it is interesting to see in Table XII. between 800 and 1200 metres a definite increase in the morbidities both in shelter and exposure, especially in exposure, although the populations in exposure are too small for us to dare to draw any positive conclusions.

From these Swiss investigations, older and newer alike, therefore, I think we are entitled to affirm—

1. That altitude of itself has no evident effect on the mortality from phthisis, such as has been supposed to exist—in other words, that increasing altitude does not here of itself appreciably decrease phthisis prevalence.

2. That altitude has, however, in exposure to rain-bearing winds just the reverse effect, the prevalence increasing with the altitude, this being presumably due to increasing exposure to these winds.

3. That there is some support for Lombard's view that an intermediate zone of increased phthisis prevalence exists, roughly corresponding to the zone of maximum humidity and rainfall, at least in exposure to rain-bearing winds.

The Mountains of Germany.

Taking next, the work done on the German mountains, there are some general points which have to be remembered. In the first place all the localities dealt with are much lower than the highest inhabited Alpine, the higher ones coming, in fact, within Lombard's belt of increased phthisis prevalence. In the Hartz the heights dealt with are less than 2000 feet above sea level, in Saxony the highest are a little over 2000, and in Baden not much over 3000 feet; also they are all below the level at which rainfall ceases to increase with altitude, and probably also suffer more from wind in exposed situations at higher than at lower levels. The claim, therefore, that phthisis prevalence becomes less as elevation increases is evidently not the same thing as in the very high altitudes we have been discussing. Moreover, the shelter afforded in the recesses of these hills is increased by the forests with which they are so often clothed. Again, all the work on German heights was done before Koch's discovery in 1882, and consequently when diagnosis was less certain than afterwards. Brockmann's conclusions, in fact, rest on erroneous diagnosis, nor was such care taken in any of the papers to avoid error as characterised Müller's inquiries; soil and shelter here, as there, were omitted from consideration; and in addition it will be seen that no such satisfactory means were adopted to prevent confusion from such sources as differences of occupation, density of population, defective notification, and imported cases. The earliest work was Brockmann's on the Hartz in 1843. He alleged that pulmonary tuberculosis was almost unknown on the plateau of the upper Hartz. In support of this he only quoted two considerably different levels, Clausthal, including Zellerfeld, at a height of about 2000 feet, and Lerbach, a mere village lower down, in a narrow valley running due south-west. He definitely said that he based his statements on Clausthal. Now Clausthal is a mining town, with silver, lead, and copper mines, and he admitted that a form of consumption, which in his opinion was not tubercular, was very common there. This other form was evidently, from his description, miner's phthisis. Statistics of phthisis in a mining community, from which miner's phthisis is excluded, cannot be regarded as convincing, and his paper must be dismissed as valueless.

Von Corval's work in Baden dealt with four years, 1869 to 1872; he allowed that his material was defective; all cases were not medically certified (he made no estimate of the proportion), and he found it necessary to include all cases certified as chronic pneumonia (Table XIV.). Six groups of

TABLE XIV.—*Von Corval's Table for Baden, 1869–1872, including all Tuberculous Deaths and Deaths from "Chronic Pneumonia."*

Altitude in feet.	Number of towns or villages.	Population, average of 4 years.	Death-rate per 1000.
330–1000	750	933,773	3·36
1000–1500	337	224,210	2·75
1500–2000	160	81,066	2·60
2000–2500	190	104,287	2·75
2500–3000	97	59,155	2·33
Over 3000	47	20,367	2·17

places were compared in ascending order of altitude, but, as the names of the places were not given, it is impossible to examine them further. He claimed to show that in higher altitude alone is to be sought one of the most important factors in hindering the development of consumption. Except for a partial elimination of density of population by tables from which towns of over 10,000, 5000, and 3000 inhabitants were successively excluded, no attempt was made to get rid of any conflicting influence. To do him fuller justice than he has done himself, or than Hirsch and Schlochow have done him, I have calculated from his figures Table XV., which eliminates density of population down to a certain point, which is as far as he gives the means of doing.

Upon his work certain comments seem justifiable. It is true, as von Corval claims, that the last column in Table XV. suggests a certain tendency in the phthisis mortality to diminish as altitude increases, and this is not negatived

TABLE XV.—*Calculated from Von Corval's Figures.*

Groups.	Height in feet.	Tuberculosis death-rate per 1000 living in towns of populations of: Over 10,000.	5,000–10,000.	3,000–5,000.	Under. 3,000.
I.	330–1000	4·5	3·4	3·6	3·1
II.	1000–1500	—	2·9	3·5	2·7
III.	1500–2000	—	—	4·9	2·5
IV.	2000–2500	—	—	3·2	2·7
V.	2500–3000	—	—	3·0	2·3
VI.	over 3000	—	—	—	2·1

by the other columns. But the figures show equally clearly an influence of size of town, and inasmuch as it is evident from his tables that the places over 3000 feet have the largest percentage of small villages, decreased density of population may alone account for the lowest figure. Again, it was stated that by far the greatest number of inhabitants are occupied in agriculture and wine-growing, &c.—open-air occupations—but that a certain proportion are employed in manufactures, not only in the largest towns, but even in the narrowest valleys of the Schwartzwald. No attempt, however, was made to separate these, so that we are free to surmise that probably as altitude increases open-air employments become relatively more common. Further, in the highest villages it is likely that the percentage not medically certified increased, and that the apparent lessening of phthisis death-rate may be due to this. These three considerations alone would invalidate any conclusion founded on his tables. But we have another reason for rejecting them as proof of an influence of altitude. Hirsch supplies a table showing the mean annual phthisis death-rate per 1000 for the different circles of Baden only a few years later than von Corval's work—namely, 1874 to 1881 (Table XVI.). Here we observe a still steeper decline

TABLE XVI.—*Baden Average Annual Phthisis Death-rates per 1000 Inhabitants in the Various "Circles," 1874–1881 (Hirsch).*

Mannheim	3·87	Heidelberg	3·04	Mosbach	2·
Karlsruhe	3·41	Offenburg	2·89	Villigen	2·
Baden	3·28	Constance	2·65	Waldshut	2·24
Freiburg	3·05	Lörrach	2·54		

in values, and if we examine the orographical map of Baden we shall see that these areas stand very much in their order of exposure to westerly and especially to north-westerly winds. Taking into consideration, therefore, the effect of these four factors alone, which have not been eliminated in von Corval's work, his figures, I submit, lose all significance.

Merbach's table for Saxony (Table XVII.), if we exclude the places under 200 metres high, only proves, if indeed it can be

TABLE XVII.—*Merbach's Table for Saxony, 1873–1875, dealwith Towns of over 5000 Inhabitants only and Deaths from Phthisis between the Ages of 16 and 60 years.*

Elevation in metres	Phthisis death-rate per 1000.
100–200	4·9
200–300	3·3
300–400	3·2
400–500	3·5
550–650	3·2

held to prove anything, that altitude has no effect whatever on phthisis prevalence. But he gives the names of the towns, their populations, altitudes, and phthisis death-rates. So that it is possible to examine them more fully and see if, in reality, any evidence of an influence of mere altitude exists. The highest town was only 2066 feet above sea level. Only towns were dealt with, but no distinction was drawn on the score of density of population or prevailing industry. The number of cases not medically certified was considerable, in some actually so many as 40 to 60 per cent. of the total, but the percentage is given for each town. A survey of the map of Saxony will quickly show that the higher death-rates occur chiefly in the more open country, the lower amongst the hill valleys of the south-west. In Table XVIII. I have put a column of arrows to show the direction of the rivers on which the towns stand as a rough

means of gauging their exposure. It is interesting to observe that the towns on rivers which flow towards the north-west, and are therefore exposed at least to winds from that quarter, have an average phthisis death-rate 50 per cent. higher than the towns which, standing on rivers flowing north-east, are more or less sheltered from all westerly winds, since these latter lie almost entirely amongst the hills. The variations in his figures, therefore, are presumably due in part to wind. With this and other influences uneliminated, all significance of his work disappears.

TABLE XVIII.—*Saxon Towns according to Direction of the Rivers on which they Stand. Annual Phthisis Death-rate per 1000 at ages 14 to 60.*

	Averages.
↗	3·2 ... 3·1, 3·7, 2·1, 2·7, 3·8, 3·6, 2·5, 2·6, 2·4, 2·7, 4·5, 3·4, 4·2, 3·8, 4·1
↑	3·6 ... 3·7, 3·9, 3·7, 3·1, 4·4, 3·6, 3·0, 3·6, 3·3, 3·5
↖	4·7 ... 4·2, 3·2, 3·9, 4·3, 3·3, 5·3, 6·1, 4·6, 7·4, 4·5, 5·6, 4·9, 4·2
←	3·6 ... 3·6 } much westward shelter.
↙	3·6 ... 3·6, 3·4 }

Or only considering Towns where at least 80 per cent. of Cases were Medically Certified.

	Averages.
↗	3·2 ... 3·7, 2·1, 2·7, 3·8, 3·6, 2·5, 2·6, 4·3, 4·1
↖	4·7 ... 4·2, 4·9, 5·6, 4·5, 7·4, 4·6, 5·3, 3·3, 4·3, 3·2, 4·2 nearly*

* I.e., nearly 50 per cent. more.

Lübben in 1880 dealt with the distribution of cases of tuberculosis in Thuringia (using morbidities, not mortalities) and only dealing with individual practices, in towns here and there, his phthisis rates being expressed in percentages of all sorts of cases of illness. Such material is obviously most unsatisfactory. No attempt was made to eliminate other influences, and the separate town morbidities were not stated. All that his figures show, if indeed they can be admitted to show anything, is a certain rarity of phthisis in the Thuringenwald. Certainly no claim for altitude can be made from them.

Virchow's statement that in the Spessart phthisis is uncommon is only what one would expect from a sparsely inhabited densely forested hill country, and is explained by himself solely on the grounds of occupation and open air. Virchow himself made no suggestion that altitude had anything to do with the low death-rate, although Hirsch quotes his statement in support of this theory. Brehmer found phthisis non-existent in Görbersdorf at the height of about 1700 feet; but Görbersdorf lies in an exceptionally sheltered valley on the east of the Reisengebirge, amongst their foothills.

With these observations in Germany should be compared Table XIX., Müller's figures for the canton of Zürich (already alluded to) at much the same heights, but where every death certificate had been medically signed, and where, for every parish separately, the necessary particulars of height, population, occupation, and number of cases originating locally had been carefully given. The result, as we have seen, was the exact reverse of the result in almost neighbouring Baden and the rest of the German districts examined.

Fuchs's comparison of the great town of Hamburg with the sheltered little mountain town of Brotterode need not detain us, nor Kuchenmeister's now untenable generalisation. The German mountains, in short, afford no valid evidence whatever of an antagonism between altitude and phthisis.

Other European Heights.

In England I have carefully examined the registration districts to discover whether difference in altitude has any effect on the disease—although our altitudes, needless to say, in no way compare with those which we have been discussing. The only fact I can trace is the same that I have traced abroad—namely, an increasing liability to phthisis where altitude increases exposure; and it is curious to note that in 1818, nearly a century ago, as already mentioned, an increase of phthisis with increase of altitude in England was recorded by Dr. Mansford, whose paper, unfortunately, I am unable to trace.

In the Pyrenees, Eaux-Bonnes, Eaux-Chaudes, Cauterets, and other places have been mentioned by Sir Hermann Weber as freer from consumption than other localities in the plains below, but these towns are wonderfully free from wind and have been specially described as sheltered by Dr. Burney Yeo, who writes of Eaux-Bonnes: "There is exceedingly little wind, and I was assured by an excellent authority that the air is often so still that one may pass days without seeing a leaf stir in the trees." In the Alpes Maritimes, Briançon, the highest town in Europe, has been quoted as singularly free from consumption, but it is shut in and thus greatly sheltered by mountains.

TABLE XIX.—*Canton Zürich (the City of Zürich excluded) (Müller).*

Highest Parishes.

Population.			Phthisis death-rate.	Metres high.
1038	I	Sternenberg	1·2	900
2228	I	Fischenthal	3·4	781
2990	I	Bäretsweil	2·9	700–800
1096	I	Hirtzel	2·5	700
4713	I	Wald	2·0	650–870
1726	I	Hittnau	2·0	640–770
1435	I	Schönenberg	1·9	700
2662	I	Hinweil	1·5	540–780
659	A	Hutten	1·5	740
690	A	Zumikon	1·5	700
2203	?	Turbenthal	1·4	556–812
2382	A	Egg	1·3	551–800
672	A	Aeugst	1·2	712

Lowest Parishes—under 400 metres (1312 feet).

731	A	Weiach	1·9	389
733	?	Schlieren	1·6	396
2288	A	Rosbas	1·3	396
1390	A	Flaach	1·3	374
968	A	Rheinau	1·2	394
1555	?	Dietikon	0·9	392
1503	A	Eglisau	0·8	340
1486	A	Glattfelden	0·8	369
2822	A	Andelfingen	0·4	396
502	A	Dorlikon	0·4	390

Altitudes in Metres of Parishes with Phthisis Death-rates under 0·7 per 1000.

			Per cent.				Per cent.
A	390	Dorlikon	0·4	A	446	Regensdorf	0·5
A	395	Andelfingen	0·4	A	446	Stadel	0·6
A	413	Marthalen	0·6	A	532	Buch	0·3
A	415	Laufen	0·5	?	560	Ultikon	0·6
A	422	Rümlang	0·5	?	600	Riffelweil	0·4
A	428	Dorf	0·5	A	617	Regensberg	0·6
A	434	Wyl	0·3	?	630	Kyburg	0·5
A	439	Dällikon	0·3				

I Means industrial. A Means agricultural.

* 900 metres (2952 ft.).

The Indian Hill Stations.

In the Himalayas the high altitude theory met with its first obviously serious reverse. It is true that Hirsch has stated that immunity from phthisis came out decidedly on the northern and southern slopes of the Himalayas, at the elevated points of the western Ghats, on the Nilgherri Hills, and on Mount Aboo, but he relied upon very old statements, some going back to 1823, which do not tally with more recent information. Some excuse for this lies in the wonderful difficulty of obtaining reliable knowledge of the frequency of phthisis in these regions. But the following statements seem sufficiently definite to quote.

Davidson states that between 1867–1876, among the Goorkha regiments stationed at Dehra (2232 feet), Dhurmsala (4500 to 6600 feet), Abbottahad (4120 feet), Almora and Bakloh (both at considerable elevations), all on the south-westerly slopes of the Himalayas, the proportions of deaths from phthisis to the total mortality was as high as 20·3 per cent., whilst the proportion among the native troops stationed in the Gangetic provinces below was only 10·6 per cent. It should, however, be here observed that racial proclivity to phthisis appears to differ considerably in India, and the Goorkhas seem to be particularly liable to the disease. Davidson states that the highest elevations of the Western Ghats and of the Himalayas are not free from consumption, though it is there comparatively rare; but in Coorg, at an elevation nowhere under 3000 feet, it is said to be very common.

Dr. Alexander Crombie, reporting at the Congress of Tuberculosis at Berlin in 1899, on the prevalence of consumption in India, quotes Webb as stating "amongst the natives inhabiting the lower range of the Himalaya Mountains I have seen scrofulous swellings and ulcers of

the neck common." The figures for the ten years ending 1896 showed that amongst native troops the higher rate of admissions for phthisis was in the hill regions. The three places where phthisis appears to be rare—namely, Kashmir (in which it undoubtedly is so, as I learn from Dr. Neve), the valley of Nepal, and Manipur—are all in exceptionally sheltered situations. Kashmir is comparatively windless, and phthisis is almost unknown outside its capital, Srinagar, but in it it is by no means rare.

It should be remembered that the hill stations of India have in the rainy season an extremely heavy rainfall. In the absence of direct information regarding prevalence, it may be held permissible to record, as bearing indirectly on the point, comparatively recent experience on the effect of Indian mountain resorts as the course of the disease. Their unsuitability has scarcely received the attention which the great experience of those who have insisted on it should have ensured.

Sir Joseph Fayrer referred to them as follows: Simla (6953 feet) "should be avoided by the phthisical." Ranikhet (6086 feet) is not of much real service. Darjeeling (6912 feet), more useful than the foregoing, enjoys considerable immunity from wind and storms. Pachmari (3564 feet) is ineligible as a resort for phthisis. Mount Aboo (3945 feet), phthisis is not benefited there. Mahableshwar (from 4500 feet to 4700 feet), after the mists set in in May, is prejudicial to phthisis. The Nilgherries, with their average elevation of station of about 6500 feet, are not advantageous in phthisis; and Newera Eliya, Ceylon (6150 feet), "has an evil reputation for cases of phthisis." At Dalhousie (6800 feet), in 1897, Surgeon-General Keogh informed me that six admissions for phthisis in the early stages were returned to the plains because the climate was too severe for them. Here, therefore, we have very high altitudes which are detrimental to phthisis patients and in some of which the disease appears to be common. These, however, are situations open to wind and with a heavy rainfall.

The Rockies, South Africa, and Persia.

Next, taking the Rocky Mountains, there is no doubt of the rarity of consumption in Colorado, New Mexico, and Arizona. From a study of Solly's "Medical Climatology" and Davidson's "Geographical Pathology" there can be no doubt of the rarity of phthisis in the eastern foot-hills of the Rockies and in their valleys and tablelands, in spite of some prevalence of wind; but then the climate is very dry. The rainfall in places is as low as 9 inches annually. It does not seem, in fact, that, as regards the prevalence of phthisis, these districts differ much from lower countries which are similarly dry, like the Darling Downs of Australia or Upper Egypt. Similar remarks apply to the high tablelands of South Africa and Persia. In none of these situations has any attempt been made, so far as I know, to prove increasing rarity of phthisis with increasing altitude. The statements regarding Abyssinia are conflicting.

Taking all this considerable mass of information into account, and it is all that is at our disposal, it seems to me impossible to arrive at any other conclusion than that no evidence of any value exists in favour of the high-altitude theory of phthisis immunity. Whether a fuller investigation on the lines of the principle which I have suggested will furnish any such evidence remains to be seen. To set the matter finally at rest it should be undertaken.

I trust that I have given sufficient illustration of the principle on which I have ventured to lay such stress—sufficient proof of its extreme importance. In closing my survey of the subject I would repeat my belief that the place of climatology in medicine should be, and is destined some day, to be a very great one, and, as a means of placing it there, I would once more urge the adoption of this principle.

THE MEDICINE OF THE FUTURE.

Thus far, however, I have dealt only with medicine as at present understood, but in the progress of civilisation will there not also be an expansion of its scope? Shall we rest content with the advance only from what one may call reparative medicine to preventive medicine? Will not the tendency be to proceed to what may some day be described as "constructive medicine"—that is to say, to the actual use of medical science in building up a more perfect organism than man at present is? With this in view we come back to the ideas mooted by Hippocrates, and it would be unfitting for anyone dealing in these days broadly with the subject of climatology to seem to fall behind the sandal prints of the great Asiatic Greek. More than 2000 years ago he pointed out the advantage of living in a city which faced the morning sun, and though the greatest apparent exception to the rule he laid down was even then rising on its Seven Hills his view has received remarkable confirmation since. Capital cities have curiously often stood upon an east coast, not merely in States with which he was acquainted, but in what were then the distant Western Isles and unimagined lands beyond the Pillars of Hercules.

Kindred questions, too, perhaps unknown to him, have since suggested themselves. Why, for instance, does empire usually establish itself most securely westwards? Why, in the Lampadephoria of the nations, has the torch of culture been passed almost continually towards the Pole? To such questions we have no answer. Yet may they not indicate profound truths which we would do wisely in trying to understand?

CONCLUSION.

Gentlemen, I have done, and I am under no misapprehension in respect of my shortcomings. I have not even offered you a completed sketch. The outlook in some directions has seemed to me so wide that I have not ventured to delineate it. Only this I will say in conclusion to those who, upon the same road, are about to pass beyond me. Bearing always in mind the infinite care and patience which alone can lead to certainty, have that faith in your findings that needs no explanations, and lay aside expectation, which is the veil that hides the obvious; so shall you come into a new realm of intellect in which humanity has more than it knows to hope for.

TETRAGENUS SEPTICÆMIA.

BY SIR JOHN BYERS, M.A., M.D., M.A.O. R.U.I.,
PROFESSOR OF MIDWIFERY AND OF DISEASES OF WOMEN AND CHILDREN IN THE QUEEN'S UNIVERSITY OF BELFAST;
AND
THOMAS HOUSTON, B.A., M.D. R.U.I.,
LECTURER ON MEDICAL JURISPRUDENCE AND DEMONSTRATOR OF CLINICAL PATHOLOGY TO THE QUEEN'S UNIVERSITY OF BELFAST; ASSISTANT PHYSICIAN FOR HÆMATOLOGY AND VACCINE TREATMENT TO THE ROYAL VICTORIA HOSPITAL, BELFAST.

Clinical History by Sir JOHN BYERS.

THE patient, who was the subject of the very rare condition—infection by the micrococcus tetragenus—is a lad between 10 and 11 years of age. I saw him first in consultation with Dr. George M. Thompson, of Bellaghy, county Londonderry, when he was a baby of three months with a tendency to diarrhœa. His mother, owing to a mammary abscess, had been unable to nurse, and there was considerable difficulty in rearing him. A wet-nurse was tried, but he did better on modified sterilised cow's milk. For the past six years he has resided in the winter season in Brighton, coming over to Ireland during the summer, where on several occasions I have seen him. While living in Brighton he has had attacks of illness, in reference to which (in reply to a letter of mine) Dr. J. F. Gordon Dill, senior physician to the Sussex County Hospital, most courteously wrote me: "I have attended him through several of these catarrhal attacks, but the only time he had a vaccine it was an autogenous one of mixed micro-organisms (micrococcus catarrhalis, pneumococcus, and streptococcus chiefly). He usually begins with an infection of one or other in a 'cold' which spreads over the respiratory mucous membrane, and often infects the gastric mucous membrane and the middle ear. On one occasion he got a rather severe broncho-pneumonia and was very dangerously ill, but the pneumonia has been usually catarrhal only." These recurring attacks he has had for eight years, but since returning five years ago from the Riviera they have become more marked, and during the one which set in at the time he came back from the South of France an abscess developed at the root of a tooth, accompanied by swelling of the jaw. In later years the attacks have been longer, more severe, and more intractable. They begin as a "cold" in the head and naso-pharynx, involvement of the ear supervenes, and then the catarrh spreads to the chest (broncho-pneumonia)

and abdomen (diarrhœa). Ever since the abscess occurred in the tooth he has been subject to attacks of rather severe pain in the chest wall—especially at the lower part of the right lateral region—of a so-called "rheumatic" type. As long as he has suffered from this form of illness his ears have been prone to be affected (pain, discharge, deafness), and during the past two years there have been old scars at the seat of former perforations. In September, 1912, while at his father's shooting lodge in county Londonderry, he had a cold after bathing—a sort of influenza attack—but no ear complication. I saw him shortly after that time, when he was wonderfully well, and subsequently he went back to his school at Brighton.

Present illness.—On Dec. 21st, 1912, he returned from Brighton to Belfast with the history that for the previous three weeks he had what was termed a slight cold. I saw him on the day he arrived, when he was suffering from catarrh of the naso-pharynx and throat. His ears became painful, and Mr. W. McCready, and afterwards (on his return from a holiday) Mr. J. A. Craig (who had attended to his nose and throat before), examined him from a throat and ear point of view. He gradually improved, the catarrh having spread no further than the large bronchial tubes, and he was up and ready to go out, when on Jan. 9th, 1913, he again suddenly became feverish in the night, with a sharp bleeding from the nose, and an apparently fresh attack of catarrh set in which spread to the ear and to the chest as a broncho-pneumonia. As the attacks were now recurring I asked Dr. Houston to take swabs from the throat and nose and to examine the expectoration (which, however, was very small and difficult to procure). Dr. Houston found evidence of the presence of the micrococcus catarrhalis, the streptococcus, and a very few diplococci. His temperature had in the meantime fallen to normal (it varied between 100° and 102° F. when the attack was at its height). On Jan. 12th Dr. Houston gave him an autogenous vaccine of streptococcus and micrococcus catarrhalis. Nothing occurred for a couple of days except an urticarial rash on the skin of the chest and abdomen, but on the fourth day his temperature shot up to 105°, and he became extremely ill with broncho-pneumonia in both lungs and superficial pleurisy. He was now in a most critical state, and two of my colleagues, Dr. W. Calwell and Dr. H. L. McKisack, saw him, but despite all we could do his most serious condition showed no signs of improvement. He lay on a water bed constantly coughing and breathing rapidly with a high temperature (102° to 104°), gradually emaciating, and taking little food, and with a large portion of both lungs involved, and with occasional turns of diarrhœa. On Jan. 16th (when the temperature was 104°) Dr. Houston telephoned me that, on further examination of the cultures from the patient's throat and nose, he had found to his surprise the micrococcus tetragenus. The question now clearly was to determine which of the organisms found—micrococcus catarrhalis, streptococcus, or tetragenus—was the *causa causans*, and to do this blood was drawn from the median cephalic, and the discharges from the throat, nose, ear, as well as the urine, were examined, and in all the micrococcus tetragenus was now found. Further, opsonic determination of the boy's serum to this organism gave a high reaction as compared with normal blood serum. In this way we arrived at the conclusion that the real micro-organism causing the extraordinary condition of blood poisoning present was the tetragenus, and a pure autogenous vaccine of this bacillus was, therefore, given on Jan. 19th, 21st, 26th, 29th, and Feb. 1st, with the remarkable results shown in the accompanying chart. On Feb. 24th in a further examination of the discharge from the ear, in addition to the tetragenus, a pseudo-diphtheritic bacillus (resembling the Klebs-Löffler bacillus, but non-pathogenic) was found, and on Feb. 29th and on March 10th, 20th, and April 3rd he was given an autogenous vaccine of both these organisms.

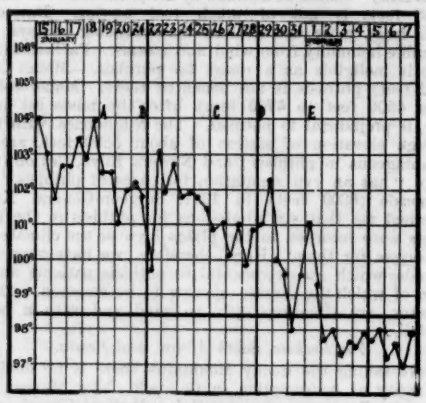
On June 9th, 1913, the patient was quite well, out every day, and playing tennis.

Remarks.—1. This case illustrates well the enormous progress that has been made in recent years in the diagnosis and treatment of disease. In times not long past we would have been quite content by saying this patient had recurring attacks of nasopharyngeal catarrh (involving occasionally the middle ear) and spreading to the chest, causing broncho-pneumonia. We are, however, not now satisfied with such a mere clinical diagnosis, but, just as in puerperal infection, we want now to know what form of micro-organism—it may be a mixed infection—is the underlying cause of the illness, so in any other form of general blood poisoning (as in this boy's case) we try to find out, by the latest modern methods, the organism or organisms at the root of his complaint, and having done so the next question is to build upon this discovery a scientific therapy, instead of trusting to the mere haphazard empiricism which so often guided the medical man of the past in prescribing many remedies.

2. A special feature of the case was its chronicity, and the question naturally suggests itself, Was this fact not due to the continued presence, with other bacteria, of the tetragenus?

3. From a clinical point of view this boy when he was at his worst presented an aspect very like the clinical picture which used to be called "galloping consumption," and had he died in pre-bacteriological days this diagnosis might have been made. No tubercle bacilli, however, were ever found in any of his secretions. The micrococcus tetragenus, as is now known, exists in the respiratory tract of healthy people, but in phthisis it is more frequently found associated with the tubercle bacillus.

Temperature Chart.



At A, vaccine 2½ millions given; at B, 4 millions; at C, 1⅝ millions; at D, 2 millions; at E, 2½ millions.

4. The English medical literature dealing with the micrococcus tetragenus is very meagre. In a valuable communication,[1] Dr. E. von Ofenheim reports a case of septicæmia (Case 3) due to the tetragenus, and he mentions that the literature contains records of only some 40 cases of this form of infection, and of these in only 26 was the micrococcus tetragenus not associated with other organisms. In the case of this boy we report, the other bacilli discovered were the micrococcus catarrhalis, the streptococcus, and the pseudo-diphtheritic. Ofenheim points out that among these 26 cases there were 16 of localised infection, seven of septicæmia associated with pleurisy, and only three of septicæmia without pleurisy. He also draws attention to the fact that it was in 1886 that Jakowski and Hoyer appeared to be the first to publish cases in which the pathogenic action of this organism was proved, as previous to that date it was regarded as a more or less innocuous saphrophyte. Since that time 40 cases, Ofenheim says, have been recorded by various authors, amongst whom were Dieulafoy, Carrière, Chauffard and Ramond, and Josué and Lian. No case of the kind would seem to have been published in English medical literature.

5. Finally, the case demonstrates in a remarkable way the great value of vaccine therapy.

Note on the Bacteriological Findings by Dr. HOUSTON.

The bacteriology of the case described above by Sir John Byers presents many interesting features. Several attempts had been made to treat this boy with vaccines without success. He had been inoculated with a mixed vaccine containing streptococcus, pneumococcus, and micrococcus

[1] Three cases illustrating the Treatment of Septicæmia by Vaccine Therapy, Proceedings of the Royal Society of Medicine, April, 1909.

catarrhalis isolated from his sputum or throat in Brighton. This vaccine had no beneficial effect. On the present occasion his sputum contained micrococcus catarrhalis, streptococci, and micrococcus tetragenus; a swab from his tonsils also contained the same micro-organisms, together with a diphtheroid bacillus. A vaccine was first prepared from the micrococcus catarrhalis and streptococcus and one inoculation consisting of 1 million streptococci and 2½ millions micrococcus catarrhalis was administered during a quiescent period. His temperature remained normal for two days and no objective or subjective symptoms were noted except an urticarial rash. On the fourth day after this inoculation his temperature rose to 105° and he became acutely ill as already described. An attempt was then made to go more thoroughly into the bacteriology of the case. A blood culture was done. From this micrococcus tetragenus grew in pure culture. This micro-organism was also obtained from his urine and from the discharge from his ear, accompanied in this discharge with a diphtheroid bacillus. Opsonic index determinations showed that his blood gave a varying and high opsonic index to micrococcus tetragenus.

The evidence in favour of this micro-organism being responsible for his condition was as follows:—1. The presence of this micro-organism in pure culture in his blood during this acute attack. 2. The presence of the same micro-organism in his throat, ear discharge, sputum, and urine. 3. An opsonic index varying with the temperature to this organism (1·7 and 2·1). 4. The effect of the administration of a vaccine made from this organism.

The micro-organism in question grew well on agar, the growth resembling that of staphylococcus albus. The growth was more slimy and gelatinous. The organism from a fresh growth appeared to be capsulated and occurred in pairs or tetrads. It was Gram-positive and did not produce any liquefaction of gelatine. A vaccine was prepared from this micro-organism and given at the times detailed on the chart. The results made it quite evident that this coccus was responsible for the broncho-pneumonia and temperature of the patient. Very small doses were employed owing to the fact that a larger dose produced a considerable reaction. This vaccine in appropriate doses completely controlled his temperature, and his broncho-pneumonia rapidly cleared up.

Reviewing his former attacks, it was apparent that this patient had been suffering for years from a condition that can best be described as a general infection or septicæmia due to micrococcus tetragenus, producing symptoms in the main referable to the respiratory tract, such as catarrh, bronchitis, broncho-pneumonia, throat, nasal, and ear trouble, but also producing at various times abscesses, diarrhœa, and acute elevations of temperature. It was interesting to note that after the first four or five doses of vaccine the reaction was accompanied by increased cough, slight diarrhœa (previously he suffered from a prolonged attack of intractable diarrhœa), and transient earache. After his temperature had become normal the boy remained very deaf, especially in one ear, and as the discharge contained large numbers of a diphtheroid bacillus it was thought wise to combine with the micrococcus tetragenus vaccine small doses of a vaccine made from this diphtheroid bacillus. This appeared to have a good effect, as his deafness and the discharge from his ears quite disappeared. The diphtheroid was at first thought to be a Klebs-Löffler bacillus, as its appearance and staining reactions closely corresponded to those of that micro-organism. Professor W. St. Clair Symmers, however, inoculated a pure culture of this bacillus into a guinea-pig without any effect.

The chief interest of this case from the point of view of treatment lies in the difficulty found in making a correct bacteriological diagnosis, and in cases of disease involving the respiratory tract this difficulty is always a real one. The failure of vaccine therapy is as frequently due to an incorrect bacteriological diagnosis as to the limitations of this method of treatment. Micrococcus catarrhalis, streptococci and even pneumococci may be recovered from the respiratory passages in health, and their presence alone is no proof of their pathogenic action. At the present time, when vaccines are demanded for every conceivable abnormal condition, I would urge that more time and study should be devoted to arriving at a correct bacteriological diagnosis before this difficult form of treatment is embarked upon.

Belfast.

THE INTRA-ABDOMINAL PRESSURE IN PREGNANCY.[1]

BY R. H. PARAMORE, M.D. LOND., F.R.C.S. ENG.,
PATHOLOGIST AND REGISTRAR, HOSPITAL FOR WOMEN, SOHO SQUARE.

THE idea that the intra-abdominal pressure is increased in pregnancy is by no means new; like the view that the levator ani supports the pelvic viscera, it also is a view "hallowed by time." Smellie, the father of British midwifery, believed the pressure in the abdomen is increased by pregnancy; and not only did he think the pressure is increased by the increase in visceral weight, but that a pressure is produced quite apart from that, by the active growth of the pregnant uterus.

About the latter end of the fifth or in the beginning of the sixth month [he says] the uterus ..... rising still higher [in the abdomen] with an augmented force, gradually stretches the parietes of the abdomen, pushing the intestines upwards to each side.

[And]: If the uterus rises too high, a dyspnœa or difficulty of breathing, and frequent vomiting ensue: the first proceeds from the confinement of the lungs and diaphragm in respiration, the liver and viscera of the abdomen being forced into the thorax; and the last is occasioned by the extraordinary pressure upon the stomach.[2]

And although during the last 50 years those who have especially studied the intra-abdominal pressure[3] have been led to believe the pressure in the abdomen above the uterus in pregnancy is not increased, thinking the abdominal wall passively relaxes to accommodate the enlarging uterus, during this same period it is clear many obstetricians, in unison with Smellie, have believed the reverse. They have been unable to accept the idea that such a prodigious increase in volume of the abdominal contents in pregnancy is possible without an increase in pressure at the same time occurring, and they have imputed to this rise a rôle in the pathogenesis of various diseases.

Sibson, in a lecture on the Influence of Distension of the Abdomen on the Functions of the Heart and Lungs[4] (1873) says:—

When the abdomen is enlarged it is enlarged also in two directions, one outwards and downwards with the extension of the abdomen, the other upwards by the elevation of the diaphragm. When the abdomen is extremely distended the whole cavity becomes oval in form, or shaped like a balloon. ..... The cage of the chest is raised by this upward movement. The whole of the wide cone formed by the upper part of the large oval abdomen, acting upon the lower ribs, forces them asunder to the right and left, and lifts up the whole front of the cage of the chest.

Playfair[5] in 1876 says:—

Some of the disorders of pregnancy are the direct results of the mechanical pressure of the gravid uterus. [Besides the œdema and a varicose state of the veins of the lower extremities other more serious conditions may occur, such as dyspnœa. There is a form of this] not uncommonly met with, which is the mechanical result of the interference with the action of the diaphragm and lungs by the pressure of the enlarged uterus. ..... Palpitation, like dyspnœa, may be due either to sympathetic disturbance or to mechanical interference with the proper action of the heart. ..... And the obvious fact that in pregnancy the vessels supplying the kidneys are subjected to mechanical pressure from the gravid uterus [may explain] the frequent existence of albuminuria during gestation.

Dakin[6] (1897), describing the effect of pregnancy on the respiratory system, says:—

As the uterus ascends in the abdominal cavity it diminishes the range of movement of the diaphragm according to the amount of encroachment on the available space. The thorax, however, to compensate for this, widens to a slight extent at its base, though it diminishes slightly in the antero-posterior diameter ..... owing probably, as Dohrn suggests, to the upward pressure of the uterus on the diaphragm.

And Blacker, who in 1909 did not believe in the mechanical theory of the albuminuria of pregnancy, in conjunction with Galabin in 1910[7] says:—

Mechanical effects arise partly from the direct pressure of the enlarged uterus, partly from the increased intra-abdominal pressure caused by its presence. The degree of the latter depends upon the tightness of the abdominal walls, which is generally much greater in first pregnancies. [And the diaphragm is also affected.] Freedom of respiration is, however, interfered with, since the presence of the pregnant uterus limits the descent of the diaphragm in inspiration.

[1] Read before the Royal Society of Medicine, Obstetric and Gynæcological Section, June 5th, 1913.
[2] Smellie's Midwifery, edited by McClintock, vol. i., p. 151.
[3] Schatz, Moritz, Weisker, Hörmann, and others.
[4] Sibson, Brit. Med. Jour., 1873, vol. ii., p. 105.
[5] Playfair: The Science and Practice of Midwifery, 1876, vol. i., pp. 232, 218, 221.
[6] Dakin: Handbook of Midwifery, 1897, pp. 56, 57.
[7] Galabin and Blacker: Practice of Midwifery, 1910, pp. 162, 168.

These quotations will suffice to show how general has been the idea amongst obstetricians that the pressure above the uterus is increased in pregnancy. This idea is clearly associated with the underlying idea that the growth upwards of the uterus is something active; that it occurs in spite of all obstacles. It pushes aside and upwards surrounding viscera; it causes a bulging of the belly wall, and of the diaphragm upwards. Clearly, this conception tacitly assumes that these musculatures resist the distension—not that they passively relax in adaptation to the enlargement. The growth of the uterus plainly cannot be associated with an increase of pressure above it, on the pancreas and kidneys, and on the liver and spleen, unless the abdominal wall and diaphragm resist its expansion. This conception assumes the growth of the uterus causes a tightness of the abdominal wall and a tightness of the diaphragm.

Nearly 50 years ago this rise of the body of the pregnant uterus upwards into the abdomen was one of the wonders of the world. Joulin (1867) described it as a most remarkable and inexplicable phenomenon: for the uterus, he said, leaves the cavity of the pelvis and ascends into the abdomen against all the laws of physics and without any anatomical reason to explain the ascending movement.[8] He marvelled that writers before him had not considered it; and we may well be struck with the indifference with which this phenomenon is regarded to-day. It is such a common occurrence that no notice is taken of it: we are so familiar with it that its failure to occur, rather than its occurrence, would create in us surprise. Matthews Duncan thought he had explained it. He said (1869):

> As the uterus enlarges in early pregnancy ..... the base f the thorax is expanded, the capacity of the abdominal cavity is increased, and the uterus, instead of forcing its way up against the influence of gravitation, is probably actively drawn up, at least to some extent, into its new site. In some cases ..... this drawing up is abnormal or extraordinary in force, and the uterus is then entirely suspended by the drawing-up forces, being removed from solid subjacent support.[9]

And so far from thinking the pressure in the abdomen is increased in pregnancy, he thought, if anything, the reverse occurs. In a lecture on Hepatic Disease in Gynæcology and Obstetrics delivered in 1879, he says[10]:—

> You will find remarks very common about the pressure of the gravid uterus upon the liver, disordering its functions, and leading to disease of the organ. Even in good authors, statements like these occur. Similar statements probably you are familiar with in connexion with the uræmia of pregnancy and parturition. I ask you, in the meantime, not to believe any such statements, neither with regard to the liver nor with regard to the kidney. ..... Men state, as if it were a fact, that there is great pressure upon the liver and upon the kidney in pregnancy, and proceed to reason upon this, not only to found theories upon it, but also plans of treatment, and all the time they have never given even the slightest good reason for believing that there is any increase of pressure.
>
> There is no evidence, but rather to the contrary, that there is any increase of pressure upon the liver or kidney in pregnancy. Indeed, if you turn to the clinical view of the matter, and regard cases of large fibrous tumours and of large ovarian dropsies, you will see nothing to confirm the belief that pressure has anything to do with producing disease of the liver or of the kidneys, for, in those cases, you might expect far greater pressure than in pregnancy, in consequence of the frequently far greater size of tumours.

I venture to hope it will be admitted that my paper,[11] which I bring forward in answer to Matthews Duncan's criticism, does contain a good reason for believing the pressure above the uterus in pregnancy is increased; that we have real evidence that this is so. The reason fibroid tumours and ovarian cysts do not cause the same amount of pressure as the pregnant uterus is, of course, due to their slow growth. Sir John Bland-Sutton says a submucous fibroid to enlarge the uterus to the size of a man's head takes ten years.[12] At what rate ovarian cysts grow I cannot say. But it is clear, quite apart from malignancy, they cause when large some pernicious effect which is due to pressure changes; otherwise, I must ask, why are they removed?

And, quite apart from the incontrovertible evidence which measurements of the pressure in the rectum and stomach give, Matthews Duncan's conception is open to other serious criticism. Clearly, he supposed the abdominal wall does not resist the progressive increase in volume of the abdominal contents caused by the growth of the pregnant uterus; he must have assumed the abdominal wall passively relaxes and causes no pressure upon the viscera. And he could not have thought the diaphragm continuously presses downwards on the epigastric viscera, otherwise he must have admitted the liver could be compressed. Clearly he must have thought the diaphragm is generally inactive; for in this way alone could the negative pressure in the thorax be transmitted to the abdomen, and so aspirate the uterus and other viscera upwards. But whilst Matthews Duncan's hypothesis presupposes a continuous relaxation of the abdominal wall and diaphragm, it at the same time pre supposes a continuous contraction of the muscles of the thoracic wall. The thorax, according to him, is actively expanded; it is the increased negative pressure and the transmission of this to the abdomen which suspends the pregnant uterus. Clearly the thoracic expansion must be continuous; at least, it must be continuous during the active part of each day when the individual is about in the erect posture. And this continued expansion of the thorax could only be maintained by a continuous contraction of the muscles of the chest wall and of those others—e.g., scaleni, &c.—which influence the position and form of the chest. It will be admitted the expansion of the chest does depend on muscles; its continued expansion must depend on continuous contraction of those muscles. But there is more to notice than this. For the increased expansion occurring in pregnancy, if active, is only possible by a continuously increased muscle contraction. But Matthews Duncan did not consider the reaction of the thoracic wall musculature in pregnancy which his conception demanded. If he had, he might have asked himself whether it was reasonable or probable that the abdominal wall and diaphragm should be continuously relaxed, whilst the muscles of the chest wall should be continuously contracted.[13]

It should not be difficult for us to realise that all the muscles of the body are continuously in a state of contraction. Physiologists have shown that this is so, at least in the case of the limbs, the muscles of which, even during rest, manifest a degree of contraction called tone.[14] And Sherrington[15] has emphasised the importance of this for the maintenance of posture. That the muscles of the belly wall, of the pelvic floor, and the diaphragm also exhibit this tone cannot be denied. They consist of the same sort of striated tissue as do the muscles of the limbs, and they are controlled by the nervous system in the same way. Clearly, if the muscles of the chest wall—the intercostals—may be continuously contracted, the same possibility for those of the abdomen must be admitted. And there is plenty of evidence that this is so. The continued tone of these musculatures, even in the non-pregnant, results in a continuous compression of the viscera, which persists during resting conditions.[16]

But when the uterus becomes pregnant another factor arises. Although in the first few months a passive relaxation of the abdominal wall and diaphragm probably occurs during resting conditions (sleep at night), whereby enlargement of the uterus and of other abdominal viscera can easily occur, and which, affecting the epigastric viscera, seems to me to explain the morning sickness of pregnancy, very soon, when the uterus begins to bulge the abdominal wall, such relaxation is prevented by the continuous stretching of these musculatures which the great and rapid growth of the uterus causes. This active elongation or stretching reflexly increases the tonic contraction of the muscles affected, whereby the force exerted by them is continuously increased, and the compression of the viscera, even during resting conditions, becomes greater. At first the uterus stretches only the lower part of the abdominal wall. But this reflexly causes an increase in contraction of the upper part and of the thoracic diaphragm. For the muscular sheaths enclosing the abdominal viscera are all coördinated and the increased tonic contraction of one induces an increased tonic contraction of the others. With this doubtless a change in the position of the thorax unconsciously occurs, whereby the pressure within the epigastrium is prevented from rising, but the limit of such

[8] Joulin: Traité d'Accouchements, 1867, p. 331.
[9] Duncan, Matthews: Researches in Obstetrics, 1869, p. 410.
[10] Duncan, Matthews: London Medical Times and Gazette, 1879, vol. i., pp. 57-59.
[11] Proceedings of the Royal Society of Medicine, Obstetrical and Gynæcological Section, June, 1913.
[12] Bland-Sutton, Sir John, Fibroids of the Uterus, 1913, p. 42.
[13] The same criticism is applicable to similar hypotheses—e.g., that of Mathes. Ueber Enteroptosis, Archiv für Gynäkologie, 1906, Band lxxvii., H. 2.
[14] Pembrey: The Physiology of Muscular Work, in Further Advance of Physiology, edited by Leonard Hill, 1909, p. 224.
[15] Sherrington: The Integrative Action of the Nervous System.
[16] Paramore: The Intra-Abdomino-Pelvic Pressure in Man, THE LANCET, Dec. 16th, 1911, p. 1677.

adaptation is soon reached. The growth of the uterus and the stretching of the muscles continuing, a spastic state in the transversales is set up, which leads to their own degeneration and the separation of the recti. The separation of the recti clearly is associated with the pull of the flank muscles; it is evidence they resist the distension of the abdomen by the growing uterus; it shows at once they do not passively relax.

And since my paper was printed I find a hypertrophy of the diaphragm in pregnancy has been observed. I was fortunate enough to send a copy to Dr. Wood-Jones, an anatomist, who kindly sent me a reprint of a recent paper of his on the Functional History of the Cœlom and the Diaphragm.[17] You may imagine my delight when in looking through it I came upon the following passage. Dr. Wood-Jones says:—

> Post-mortem evidence may also be obtained of the action of the diaphragm in the expulsion of the fœtus. I have seen in many cases multiple hæmatomata of the diaphragm in women who have died either in child-birth or after confinement. Even in a woman of 37 who aborted at 4½ months, as the consequence of an operation, the diaphragm was markedly thicker than that of a virgin of 19 examined on the same occasion; and, in addition, the diaphragm of this woman showed a series of large hæmorrhages in the muscular portion, each hæmorrhage being due to the rupture of muscular fibres.
>
> From the evidence at my command (which I readily acknowledge is altogether insufficient to warrant dogmatic statements), I should think it highly probable that some hypertrophy of the diaphragm takes place during the later months of pregnancy, and of the severe expulsive efforts of the muscle at the completion of pregnancy there can be no doubt.

When it is recognised that neither Dr. Wood-Jones nor I knew of the work of the other, and that I came to the opinion that the diaphragm in pregnancy must either be hypertrophied or else in a state of spasticity—an hypertrophy complicated by spasm—from my reasoning, the value of his observations will be appreciated.

But as far as I understand from his paper Dr. Wood-Jones is of the opinion that the diaphragm hypertrophies in pregnancy for the subsequent expulsive efforts of childbirth which ultimately have to occur. That is not my opinion. For me, the diaphragm begins to hypertrophy when the pressure within the abdomen begins to be permanently raised as a result of the progressive and rapid increase in volume of the visceral mass, which by putting the abdominal wall on the stretch determines its spasticity. The diaphragm hypertrophies, not for what is going to happen at term, but to prevent the epigastric viscera from being thrust up into the chest, and to maintain the negative pressure in the thorax during the pregnancy. Clearly, when hypertrophied, the tonic contraction of the diaphragm is greater than before it is hypertrophied; and the effect of this must be that the epigastric viscera are continuously pressed downwards with a greater force during the pregnancy. The diaphragm hypertrophies because it cannot help it. For a similar reason those changes in the abdominal wall, already considered, occur.

Such being the case, it is plain the pressure above the uterus is increased in pregnancy, and that as long as the abdominal wall is in good condition such increase will be maintained or even become greater. But with its weakness which results from its spasticity, and which becomes apparent towards the end of pregnancy in primigravidæ, and earlier in other cases, and consequent on the yielding which such weakness allows, a fall of pressure must inevitably result. This, however, is a late manifestation, not an early one, of pregnancy. And before this occurs the pressure is maintained high. How, then, does the uterine body rise into the abdomen when it becomes pregnant? What causes it?

Five years ago I brought a paper before you on the Supports-in-Chief of the Female Pelvic Viscera.[18] On that occasion we saw that the existence of the intra-abdominal pressure, the compression of the abdominal viscera caused by the tonic contraction of the abdominal wall and diaphragm, and the very great rises incidental to activity caused by the increased contraction of those musculatures, necessitated a closure of the wide and diamond-shaped outlet of the pelvis adequate to resist the visceral thrust. On that occasion we fastened our attention on the pelvic closing apparatus, and considered the intra-abdominal pressure incidentally. To-night the same subject is before us, but instead of considering the conditions in the non-pregnant we are looking at the conditions in pregnancy, and our attention on the factors at play is reversed. It is the intra-abdominal pressure we are interested in chiefly; but we see that this is caused by a persistently increased activity of the abdominal wall and diaphragm. What, then, we may ask, is the state of the closing mechanism of the pelvis? Does a consideration of the subject before us support the conclusion arrived at five years ago? Does the pelvic floor really occlude the pelvis? Is it the mechanism retaining the pelvic viscera within the pelvis supporting them in place? Or is it, as some then thought, and apparently still think, the connective tissue attachments of the viscera which effect this? An answer to this question is speedily arrived at. On the one hand, we find the pelvic floor musculature hypertrophied in pregnancy; on the other, that the dense thickenings of the connective tissue have disappeared. They have, at least, become so inconspicuous that the reason assigned to them in the non-pregnant for supporting the uterus—that they are obstacles for its removal—is in pregnancy no longer applicable. The pregnant uterus, it is stated, is one of the easiest tumours to remove. Such confirmation must yield the liveliest satisfaction to those gynæcologists convinced of the necessity of an obturator of striated muscle occluding the pelvic outlet, but at the same time afford but dismal reflections to those who reject that conception.

The existence of the pelvic floor musculature and its hypertrophy in pregnancy explain in the readiest manner the rise of the body of the pregnant uterus, its invasion of the abdomen, the displacement of surrounding and superimposed viscera, and the overcoming of the abdominal wall and thoracic diaphragm with a resulting increased compression of the viscera. But how those who reject the pelvic floor musculature as the mechanism closing the pelvic outlet, supporting the viscera, can account for the sequence of events in pregnancy I cannot conceive. I cannot but think it must be difficult of explanation; indeed, it seems to me they must regard this evolution still, in the words of Joulin, as a most remarkable and inexplicable phenomenon.

[17] Wood-Jones: Journal of Anatomy and Physiology, vol. xlvii., April, 1913, p. 308.

[18] Proceedings of the Royal Society of Medicine, Obstetrical and Gynæcological Section, 1908, vol. i.

ROYAL NATIONAL SANATORIUM, BOURNEMOUTH.

The annual general meeting of governors of this institution was held on June 11th at the Westminster Palace Hotel. Mr. D. H. W. Robson-Burrows presided over a very small attendance. On the motion of the Rev. E. M. Scott the annual report and statement of accounts were adopted. The chairman said it was regrettable that there were so few present, because it was getting on for a year since the institution began to gradually undergo a very considerable change. The figures showing the change that had taken place in the class of people they had to treat were rather interesting. Up to June 5th they had a total of 97 people in the institution, or roughly an increase of 10 or more compared with the number with which they were accustomed to deal. Out of the 97 no less than 71 of the patients came under the Insurance Act; 52 were insured persons, and the remaining 19 were the dependents of insured people. Therefore, instead of having, as they used to have, 80 to 85 patients nominated, they had now only 26 of that class. That showed that a very great change had come over the institution, and from the financial point of view the annual donations and subscriptions had decreased, and there was no doubt they would go on decreasing, as there was no reason why people should contribute towards what was now being done by the State. For the time being they had limited their arrangements to local authorities of the county of Hampshire, the county of Dorset, and the county borough of Bournemouth, although they had received communications from various parts of the country. The annual report showed that the financial results for the year were satisfactory. The total expenditure amounted to £3783, and the ordinary income to £3793. They were fortunate in receiving £2776 from legacies. The amount received from annual subscriptions was £1577, being £78 less than the amount received in 1911. The donations totalled £398, a decrease of £375. The Metropolitan Hospital Sunday Fund grant was also reduced, and there had been a continuous falling off in the contributions awarded by the Bournemouth Hospital Saturday and Sunday Fund. The total annual subscriptions received in 1912 amounted to £1577 10*s.* 6*d.*, compared with £1656 7*s.* 6*d.* in 1911, and the donations in 1912 totalled £413 5*s.* 1*d.*, as against £783 19*s.* 5*d.* in 1911. Mr. J. W. Archer, Mr. Robson-Burrows, and Mr. George J. Fenwick were re-elected members of the committee of management.

A NEW SPIROCHÆTA FOUND IN HUMAN BLOOD.[1]

PRELIMINARY COMMUNICATION.

BY HELEN CHAMBERS, M.D.

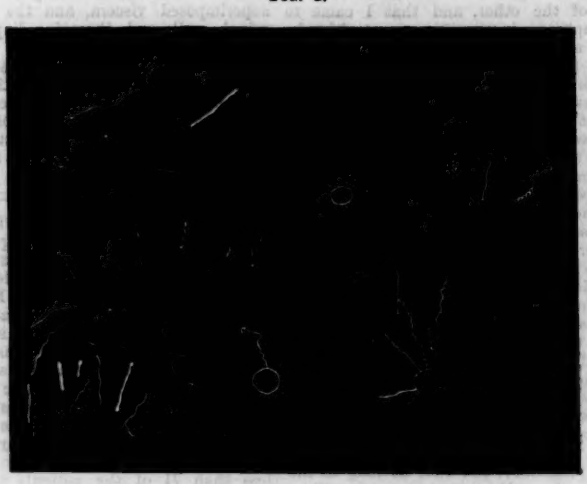
(From the Pathological Laboratory of the Royal Free Hospital.)

Introduction.—In the course of a research on the pathology of Graves's disease a spirochæta has been found in human blood which, as far as I know, has not been previously described as infecting the blood stream in man. Before discussing the organism in detail an explanation of the ideas which have led to its being detected is, perhaps, desirable. At the Royal Free Hospital there are special facilities, in that there is a large supply of material for the study of the pathology of goitre, and during the last nine years the writer has examined over 500 specimens removed by surgical operation. The results of the early part of this work were published in 1909.[2] In this paper the conclusion was reached that in some of the goitre cases the thyroid gland shows changes which indicate a chronic inflammatory process, and it was pointed out that these inflammatory changes are similar to the effects produced in tissues by infection with the treponema pallidum. In many of these goitre cases syphilis can be certainly excluded; many attempts were, therefore, made to find evidence of the presence of some other infecting agent in the thyroid gland, but without success. Now the majority of goitre specimens showing these histological changes were from patients who had suffered from the symptoms of hyperthyroidism—i.e., they were cases of primary or secondary Graves's disease. The inquiry, therefore, became concentrated more particularly on Graves's disease. In many cases of primary Graves's disease if the gland be examined carefully it is found that the changes are not uniform throughout the gland tissue. The absence of colloid and alteration in shape of the vesicles, with consequent opacity of the tissue, occur sometimes in localised areas. White nodules are found in the gland varying from the size of miliary tubercles to patches half an inch in diameter and larger, and in the centre of these nodules it is common to find a collection of lymphocytes and plasma cells. This distribution and the recognition of the fact that vesicles similar in shape to those in Graves's disease are found in a thyroid gland inflamed as a result of injury give support to the idea that the cause for the condition is an organism which has lodged in the centre of these foci.

A short time ago it occurred to the writer that if this hypothesis be true the infecting agent would probably not be limited to the thyroid gland. There might be a general blood infection, the thyroid gland changes and symptoms being due to local congestion or inflammatory changes caused by such infection, a somewhat parallel condition to what occurs in trypanosomiasis and sleeping sickness. In support of this theory it may be remembered that Graves's disease, like trypanosomiasis and syphilis, is usually associated with lymphocytosis and some swelling of the lymphatic glands. The blood from several cases of Graves's disease was, therefore, examined, and a spirochæta was found, having in all the cases the same apparent characteristics. Further examination, with somewhat improved technique, has shown, however, that this organism is extremely common in human blood, and that it occurs in almost every specimen examined, both patients and healthy people. Up to the present time the blood from 12 cases of Graves's disease, from 20 patients suffering from other diseases, and from 15 healthy people has been examined, a total of 47 cases, and the organism has been detected in all except 3. It has been found in children as well as in adults.

Technique.—The blood is collected in a small Wright's tube and is allowed to clot at 37° C. for 20 minutes. The serum which has separated is then pipetted off. If a drop of this serum be placed on a slide and covered with a coverglass 7/8 in. square and examined by dark-ground illumination, in most cases one or two organisms can be found on the slide. The remainder of the clot is returned to the incubator, and after 1½ hours the serum which has separated owing to further shrinkage of the clot is examined by dark-ground illumination.

FIG. 1.



Diagrammatic representation of the spirochætæ seen in normal serum when examined by dark ground illumination.

The organisms escape into the serum chiefly during the last stage of contraction of the clot, and by adopting the above procedure they are concentrated in a small volume of the serum. As a rule they are easily seen. The number found varies considerably. In the majority of specimens prepared in this way four or eight can be found on each slide; in other cases the organisms are very numerous, ten and more being found in each field of the microscope.

Some of the specimens of blood containing the largest numbers have been obtained from apparently healthy people. The number of organisms found fluctuates at different times. In three cases examined six weeks ago the blood contained the organism in large numbers; on many subsequent examinations comparatively few were found. They have now, however, increased and are almost as numerous as when the blood was first examined.

Morphological characters.—The organism is actively motile and is very variable both in length and thickness. The majority measure from 4μ to 30μ in length; very long forms are, however, met with. Some are extremely thin like the treponema pallidum, others are almost as thick as typhoid bacilli.

The body is soft and flexible when thin, and forms open curves which are constantly being obliterated and re-formed. It is more rigid in the thicker forms. When free it moves in either direction. It is often attached by one end, sometimes by both ends, and the body then shows continuous lateral movements. In the thicker forms it shows a fine spiral structure appearing as dark and light closely set transverse lines—waves of motion passing longitudinally from end to end of the spirochæta can often be detected. Sometimes the terminal portion moves from side to side independently of the rest of the organism. The ends are usually rounded, sometimes they are swollen and look like spores; in the finer spirochætæ the ends

[1] A paper read at a laboratory meeting of the Pathological Section of the Royal Society of Medicine held at the Middlesex Hospital on May 20th, 1913.

[2] Brit. Med. Jour., Sept. 25th, 1909.

are tapering. The spirochætæ have been seen to vary in length, and are sometimes partly straight and partly spiral. Round spore-like bodies are sometimes found loosely attached to the ends or laterally on to the spirochætæ.

Division takes place longitudinally and the organism has been seen in various stages of partial division. It differs from the treponema pallidum in that the ends are usually rounded, the body is more flexible, and the curves are capable of straightening out. The thinner forms are, however, difficult to distinguish. Fig. 1 is a diagram of the organisms; some of them are attached to red blood corpuscles, as seen by dark-ground illumination.

Staining.—The spirochæta has been stained with Leishman and Giemsa's stain. Small, red, chromatin granules are often found at the ends, and sometimes these granules occur along the length of the organism. The rest of the spirochæta stains faintly blue. It is not stained by Gram's method. The thick forms are easier to stain than the thin spirochætæ, and in stained films the latter are often not detected. The best results with stained films have been obtained from a 48-hour broth culture. They were fixed in absolute alcohol for 10 minutes, then treated with 1 per cent. osmic acid for 10 seconds, and stained for 10 minutes with anilin gentian violet. Figs. 2, 3, 4, and 5 are photomicrographs of a film prepared in this way. Many of the organisms are, when stained, almost straight; others show a very distinct spiral structure. Repeated but unsuccessful attempts have been made to stain the spirochætæ grown in serum which has been incubated for 24 hours. As will be seen later this serum, on examination by dark-ground illumination, contains actively motile organisms in large numbers. The spirochætæ have been stained in blood clot by Levaditi's pyridin method. The original method of Levaditi for staining the treponema pallidum in tissue has not, however, given successful results.

Cultivation.—If the serum which has separated from the clot after half an hour at 37° C. be pipetted off, left in the incubator at 37° C. overnight, and examined the next day it is found that the clear supernatant fluid contains very few if any organisms. The fluid surrounding the corpuscular deposit at the bottom, however, contains the spirochætæ in very large numbers. They have obviously multiplied. They are, however, extremely thin, and will not be seen at all unless a strong light is used for the dark-ground illumination. If the serum be shaken and then vigorously centrifuged and the supernatant clear fluid examined it is found to contain numerous spirochætæ. Presumably, therefore, gravity has not much effect upon them when immersed in serum, and they are found in the corpuscular deposit because this is the only part of the fluid where the conditions are suitable for growth.

If blood be taken from a vein with the technique used for blood cultures and introduced into broth flasks and incubated for 24 hours the spirochætæ are found in large numbers amongst the corpuscles at the bottom, but not elsewhere—i.e., if the broth has not been disturbed. This occurs if ½ c.c. of blood is introduced into 40 c.c. of broth. The flask is shaken at the time the blood is collected, and the culture medium is therefore largely broth. The spirochætæ disappear if the broth becomes extensively contaminated with other organisms. They have been found, however, actively motile for two days in conjunction with streptococci. A broth tube containing these organisms was heated to 50° C. for an hour. They were still actively motile.

Blood has been shed into melted glucose agar tubes at 42° C. and the agar then allowed to set. The organisms multiply in the blood-clot, and are found in large numbers 24 hours later, and are still actively motile after 20 days at 37° C. After several days' incubation many thick forms are found in addition to the finer spirochætæ.

In all the above attempts at cultivation the organism has multiplied in the blood itself or in the first cultures taken. It has not, up to the present, been successfully subcultured on to artificial culture media.

Conclusions.—1. A spirochæta has been found in human blood, and as far as can be said at present it is almost, if not quite, universal. 2. It is probable that this organism is identical with some of the numerous forms of spirochætæ which occur on ulcerated lesions. 3. The pathogenic effects of this organism, if any, have still to be determined.

I am indebted to Dr. Gertrude Gazdar for assisting me with this research.

FIG. 2.

FIG. 3.

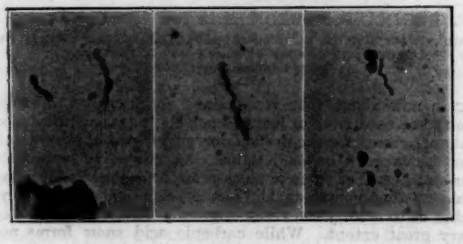


FIG. 4.

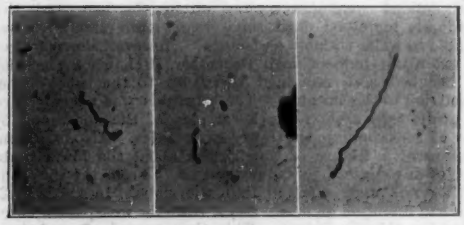
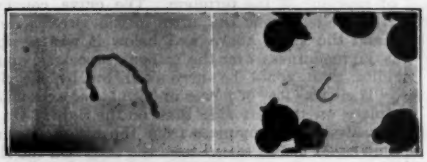


FIG. 5.



Photomicrographs of spirochætæ from a 48-hour broth culture of normal blood. Stained with aniline gentian violet. × 1000.

THE ROYAL SOCIETY.—The second conversazione of the Royal Society was held at the rooms of the society, Burlington House, on Wednesday, June 11th, when Sir Archibald Geikie received a distinguished number of Fellows and guests. As is usual, ladies were invited on this occasion. The exhibits were a repetition of the conversazione given on May 7th, with the exceptions of the ingenious telegraphon of Dr. O. Paulsen, shown by Professor Silvanus P. Thompson; the examples of recrystallisation of gold on annealing, by Dr. T. K. Rose, of the Mint; and some beautiful specimens of Egyptian jewellery (3400 B.C.), exhibited by Professor W. M. Flinders Petrie.

A CASE OF SPINAL TUMOUR WITH SCOLIOSIS; OPERATION.

BY WILFRED HARRIS, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO ST. MARY'S HOSPITAL; THE HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE, ETC.;
AND
A. S. BLUNDELL BANKART, M.C. CANTAB., F.R.C.S. ENG.,
SURGEON TO THE HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE; THE ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, ETC.

THE association of lateral curvature of the spine with a tumour compressing the spinal cord does not appear to have been previously recorded.

The patient in the following case was a woman, aged 57 years, who was admitted to the Hospital for Epilepsy and Paralysis, Maida Vale, in September, 1912. She gave no history of previous illness. The first symptoms of her present illness were noticed as far back as 1905, when she complained of weakness and aching in the back. She consulted a medical man, who discovered a dorsal curvature of the spine, and ordered a poroplastic jacket, which she wore until her admission to the hospital. About a year later (1906) she noticed weakness coming on in the legs, and this gradually increased until, three years later (1909), she was unable to walk without assistance. However, she managed to get about indoors until December, 1911, when she took to her bed and remained there up to the time of her admission to the hospital. The paralysis was accompanied by girdle-pain around the lower part of the chest and by loss of sensation in the lower extremities. Also, she complained of a feeling of constriction about the lower limbs and of involuntary jerky movements. From the first the left leg was more affected than the right. In April, 1912, she had retention of urine, and a catheter was passed twice a day for about a month. This then passed off, and there has been no further affection of the sphincters.

On admission to the hospital she was found to have a well-marked lateral curvature of the spine, with a moderate amount of rotation of the vertebræ. The curve, convex to the right, extended from the fifth to the twelfth dorsal vertebra, and the spine above and below it was straight. There was no tenderness over the spinous processes, and no more rigidity than could be accounted for by the fixed scoliosis. There was loss of power in both lower extremities, more complete on the left side than on the right. On the left side paralysis was complete from the hip downwards, and the limb could not be raised from the bed. On the right side all movements were possible but very weak. On both sides the knee-jerk was increased, and there was ankle clonus and extensor plantar reflex. The abdominal reflex was present. Anæsthesia to pin-prick extended in front on the right side up to the level of the xiphoid cartilage; on the left side two inches lower. Behind it reached to about the level of the ninth or tenth dorsal spinous processes. (The upper limit of anæsthesia, therefore, corresponded with the sensory area of the seventh dorsal segment of the cord.)

Laminectomy was performed on Oct. 7th, 1912. The fourth and fifth dorsal spinous processes and laminæ were removed first. On opening the dura there appeared to be an excess of cerebro-spinal fluid surrounding the spinal cord, and the cord itself looked somewhat smaller than normal, as though it were compressed. A probe passed upwards within the dura met with no resistance. On passing the probe downwards an obstruction was felt about two inches lower. The spine and laminæ of the sixth dorsal vertebra were then removed, and the incision in the dura extended downwards. A soft pinkish tumour, about the size of a pigeon's egg, was then exposed and found to be adherent to the inner surface of the dura, and compressing the cord on its left postero-lateral aspect. It was easily peeled off the cord and removed by blunt dissection. The seventh (or eighth?) posterior nerve-root was adherent to the tumour and was resected. The tumour weighed three grammes, and presented a granular appearance to the naked eye. Microscopically it was a typical endothelioma (psammoma) with the cells everywhere arranged in whorls. One section showed psammoma bodies.

After the operation recovery was uninterrupted, and up to a certain point rapid. In a week the patient was able to appreciate a pin-prick anywhere, and in three weeks all her movements had returned. The finer forms of sensation came back more slowly, and it was several weeks before she was able to stand. She is now able to walk without assistance.

This case is interesting, first, on account of the scoliosis which is a well-recognised accompaniment of some spinal cord diseases, but which, so far as we can discover, has never before been described in association with a spinal tumour. The presence of spinal deformity in this case had led to a diagnosis of arthritic disease of the spine, which was supposed to be causing pressure on the cord, and when seen by us the patient had already been refused operation on that account. But even if spondylitis deformans ever produces compression paraplegia, this case was quite unlike an instance of that disease, for the spinal curve was a typical scoliotic curve, as stiff as such cases often are, but without any of the rigidity of spondylitis. On the other hand, the neurological course and symptoms pointed clearly to pressure of some kind upon the spinal cord, so the patient was sent into the hospital for operation.

Secondly, the situation of the tumour corresponded exactly to the upper limit of demonstrable anæsthesia, which is unusual. The rule is to locate the tumour in the dorsal region one or two segments higher, so as to allow for the overlapping of the sensory areas immediately above. This led to exposure of the cord above the tumour. A much more common mistake is (or used to be) to go too low. Lastly, the very slow rate of growth is worth notice. The first symptoms appeared more than seven years ago, and the legs became affected about a year after the spinal deformity was noticed. But six more years elapsed before the patient was completely disabled. This should indicate a good prognosis.

SOME RESULTS OF FURTHER EXPERIENCE WITH SOLID CARBON DIOXIDE.

BY REGINALD MORTON, M.D. TOR., F.R.C.S. EDIN.,
PRESIDENT, SECTION OF ELECTRO-THERAPEUTICS, ROYAL SOCIETY OF MEDICINE; IN CHARGE OF THE X RAY DEPARTMENT, WEST LONDON HOSPITAL.

IT is now about four years since solid carbon dioxide began to be used more or less extensively in this country as a local application for the destruction or removal of superficial adventitious growths or lesions. As might be expected after an interval of three or more years from the introduction of a new therapeutic agent, further experience invariably teaches us to modify the views originally held, sometimes to a very great extent. While carbonic acid snow forms no exception to this rule, it is very likely that few things have given less reason for making any important changes in the ideas first entertained. In fact, it may be said that practically all the claims made in my original paper published in THE LANCET[1] remain substantially true at the present time. During the last year or so I have had opportunities of seeing a number of my cases treated in the first few months after I began to use it, and it is on account of these that I wish to record such modifications in my former statements as will more accurately correspond with present knowledge.

A word on appliances and methods of preparation. A number of devices have been brought out for facilitating the preparation of the pencils or for preventing unnecessary waste. Some of these have their good points; I have tried most of them at one time or another, but none of them have such distinctive advantages over the method I described at length in my original papers as to make them worth while. As for the question of waste, the material is so cheap that it would take a very long time to save the cost of the apparatus. With a little practice it is quite easy to draw off in a towel almost exactly the amount required for any particular case, and with a few tubes of different sizes in which to mould it, the whole process does not take more than one or two minutes. As for a holder, no form of mechanical clip is really satisfactory, and something better than a strip of lint wound round the crayon two or three times has yet to be designed.

In regard to nævi, carbon dioxide is easily the most useful and efficient agent we possess. It is not suitable for all, but it will give the most satisfactory result in at least

[1] THE LANCET, Dec. 4th, 1909, p. 1658.

70 per cent. of all cases. Some cases of cavernous nævus are quite unsuitable for this method and should be destroyed by electrolysis, but many of them are easily removed by carbon dioxide, and where this is possible it is the more preferable method. Of capillary nævi, quite 90 per cent. can be cured by a single application; this refers to the raised form with a "raw beef" appearance, and not to what is commonly known as the "port-wine stain." This latter remains the most difficult of all to deal with in any way that is satisfactory. A certain number of cases can be improved, and a very few practically cured, but no more than this can be claimed. In the treatment of lupus vulgaris carbon dioxide is not such a conspicuous success as would warrant our using it where other well-tried methods are available. At the same time it should be remembered that some cases have responded very satisfactorily to a series of freezings—not only to the extent of being apparently cured, but remaining so. While it is too soon to speak of these apparent cures as in any way permanent, the method may be put forward as an alternative one with some confidence.

In my original papers I made statements regarding the treatment of moles and warts that require modification in detail. The ordinary non-hairy pigmented mole responds very unequally and for no apparent reason. At times the result is gratifying to the extent of brilliancy, at others an almost equally brilliant failure—that is to say, though the immediate result may be all that is desired the pigment eventually returns and further applications are necessary to effect its permanent removal. For the hairy mole I am now convinced that this method should take a secondary place. I find the best way is to remove the hairs by electrolysis, using an unguarded needle and a fairly strong current. As most or all of the pigment cells are destroyed in the process no further treatment may be required. If any remain to be done afterwards, the carbon dioxide is very useful and helps to get a smooth scar that gives a finish to the work.

With regard to warts, complete success is not so readily attained as I at first supposed, but I have also learned that the few failures I have had were due to faulty technique and not to the method itself. Many warts are very poor conductors, and as such it is sometimes very difficult to be sure that the freezing extends to a sufficient depth. I know of no way of being sure of this—except by deliberately over-doing it, which is hardly scientific—and there must always be a few cases that require a second or third application. Apart from this, and where there are only a limited number to deal with, this method is easily the best known at present. For small localised carcinomata carbonic acid snow is of no practical value, and while it has a limited value in the treatment of keloids the X rays are to be preferred in nearly all cases.

There is one use for solid carbon dioxide that does not seem to be as generally known as it should be. I refer to the treatment of chronic localised patches of eczema. It frequently happens that a few small patches remain after a more or less general attack; they are very irritable at times and very obstinate and difficult to cure. When apparently cured they tend to recur on the slightest provocation. If such a patch be treated in this way the irritation is relieved almost immediately, and does not return unless recurrence of the eczema takes place at some subsequent time. In a week or ten days the whole place heals up and tends to keep well longer than after any other method of treatment I have tried. There is no troublesome messing for weeks with ointments and lotions—repair sets in immediately after the first reaction, and if the freezing has been properly done the result is most gratifying. Any signs of recurrence should be touched with the crayon at once for a few seconds, and if this is persevered in something approaching a permanent cure of the patch seems to be obtained. This is one of the most satisfactory uses for solid carbon dioxide that I have discovered. A simple dressing of mildly antiseptic ointment should be worn for the first few days. There is one precaution that must be carefully observed, and that is to see that every part is properly and evenly treated. There seems to be no extension of the effect beyond the part actually in contact with the snow.

In a paper read before the Section of Electro-therapeutics in the Royal Society of Medicine last year I advocated the use of solid carbon dioxide in the treatment of rodent ulcer. While it has not turned out to be the brilliant success I hoped it would, I feel sure that it has not yet received the credit it deserves. Take an ordinary case where the ulcer is of moderate size and of comparatively recent origin. Such a case is admittedly a simple one and may be cured by any one of several methods. The question arises, Has carbon dioxide any distinctive advantages? The momentary discomfort of the application is followed by a painless reaction and the gradual replacement of the rodent ulcer with one of the healthy healing variety. The whole thing is finished and done with in from 14 to 21 days, and that after a single application lasting about 40 seconds. I do not think that any other method has anything better to offer than this. Zinc ionisation is painful and the ions do not penetrate far enough to ensure non-recurrence. Radium and the X rays are more expensive forms of treatment and take a longer time, besides producing permanent changes in the tissues peculiar to themselves that should be avoided when possible. Also, if the case is one of some standing it is well known that both radium and the X rays will readily produce a healing over of the ulcer before the deeper extensions of the growth have been destroyed. In my experience the ulcer will not heal over effectually after carbon dioxide until every portion of the diseased tissue has disappeared. The most difficult cases to deal with are those that are of long standing and have been apparently cured by one or more of the other methods I have referred to. Mr. Hayward Pinch, in his splendid report of the work done in the Radium Institute, has stated that the previous use of carbon dioxide militates strongly against success in treatment with radium. The permanent change in tissue after any form of radiation is not likely to be the same as after a brief period of freezing, and I very much doubt if the latter produces such far-reaching effects. This, however, only brings us round to the fact that whatever the method we prefer to employ, we are more likely to be successful if our cases have not been treated before in any way. I am convinced that carbon dioxide is fully entitled to a recognised place among our methods of dealing with this form of ulcer, especially in the earlier stages. It is simple, rapid, and efficient, and causes very little inconvenience.

With regard to trachoma, solid carbon dioxide has proved to be more valuable than I at first supposed. In the first series of cases the cure took considerable time, and did not seem to have any very distinct advantages over copper sulphate. Further experience has shown that it may be applied very energetically without risk, and a cure can be obtained in about one-half the usual time. The application is not nearly so painful as the chemical agents usually employed.

Carbon dioxide is now used for a number of conditions and in almost every department of medicine, but as the above practically exhausts the list of diseases of which I have had any extensive experience I must leave others to deal with such other conditions as come under their observation.

Harley-street, W.

THE INGESTION OF BACTERIA BY THE SUBEPITHELIAL LYMPHATIC GLANDS IN HEALTH.

BY KENELM H. DIGBY, M.B., B.S. LOND., F.R.C.S. ENG.,
MEDICAL OFFICER, GREAT CENTRAL RAILWAY.

THEORETICAL considerations[1] had led me to suspect the passage of bacteria into the subepithelial lymphatic glands under normal conditions. After slight initial difficulties had been overcome the actual microscopic evidence of this passage through the intact epithelium proved to be far more convincing than could fairly have been anticipated. When I exhibited a few sections illustrating this process before the Pathological Society of Manchester in December, 1912,[2] I was unaware of any previous work on this subject. But a wider knowledge of the literature shows that the presence of bacteria undergoing phagocytic destruction had been demonstrated in the tissues of the appendix, Peyer's patches, and tonsils of healthy rabbits, cats, and dogs by Dr. Armand Ruffer so far back as 1890. In his very excellent paper[3] on the subject he refers to previous

[1] K. H. Digby: Subepithelial Lymphatic Glands, Guy's Hospital Gazette, May 13th, 1911; Functions of the Tonsils and the Appendix, THE LANCET, Jan. 20th, 1912, p. 160.
[2] In a paper reprinted in the Universal Medical Record, February, 1913.
[3] Armand Ruffer: On the Phagocytes of the Alimentary Canal, Quarterly Journal of Microscopical Science, February, 1890.

demonstration of the bacteria in such situations by Ribbert and by Bizozzero in 1885. I have been unable to trace the references.

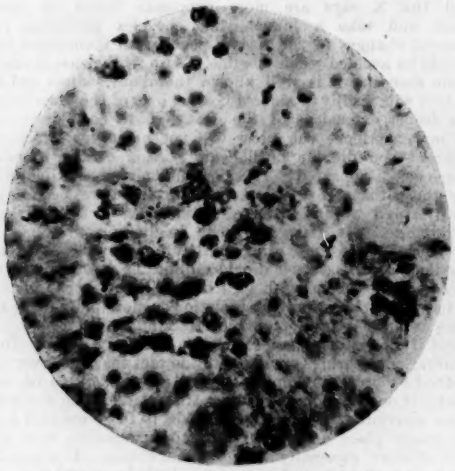
I am urged, however, to publish illustrations of this physiological process, for, though the knowledge is not fresh, it has certainly been allowed to slip into the background. These illustrations show bacteria in the lymphoid tissue of the appendix, Peyer's patches, and faucial tonsils of the rabbit. The animals from which they were taken were to all appearances quite healthy. They were killed instantaneously by fracture of the cervical spines, and the appendix, tonsils, and Peyer's patches were removed as rapidly as possible and without being subjected to any squeezing. The tissues were fixed in 10 per cent. formalin or absolute alcohol, the latter yielding the clearer results. The staining methods employed were Weigert-Gram's, carbol-fuchsin decolourised in clove-oil, Pappenheimer's pyronin and methyl green, and Powell-White's eosin and toluidin blue. As the bacteria in these tissues are partially destroyed some extra care is required in attaining the proper stage of decolourisation.

These sections show the constant presence of immense numbers of bacilli in the lymph-structures of the appendix and Peyer's patches, and smaller numbers of cocci in the tonsils. Most of the bacteria are intracellular. Solitary bacteria and cells loaded with bacteria can also be seen in their passage through the epithelium. So that, contrary to common belief, the lymph cells are both motile and phagocytic.

The universal presence of bacteria in these healthy tissues necessitates caution in examining pathological material. Bacilli found in Peyer's patches in typhoid fever are probably typhoid bacilli, but the presence of bacilli in Peyer's patches does not prove typhoid or other intestinal infection as has sometimes been assumed.[4] Notwithstanding this difficulty a careful pathological search of the tonsils and other sub-epithelial lymphatic glands might cast some light on the virus in scarlet fever and acute anterior poliomyelitis.

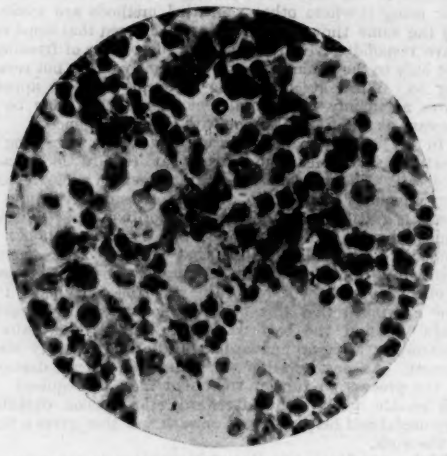
The principal importance of these illustrative figures seems to be the support they give to the view that the sub-epithelial lymphatic glands protect the body against bacterial infection by processes of autovaccination. They also would seem to cast some light on the problem of the healthy human carrier in infectious diseases. Ledingham and Arkwright in their recent valuable publication[5] (from which I have freely borrowed in the following remarks) have shown

FIG. 1.



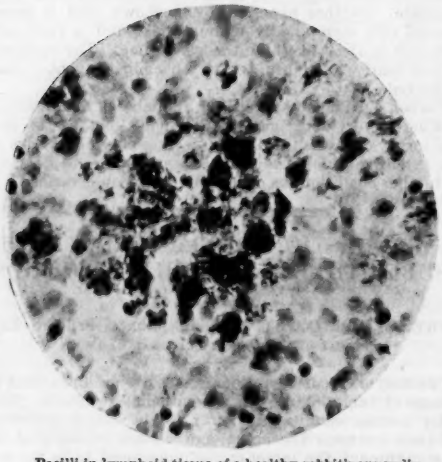
Micrococci in lymphoid tissue of a healthy rabbit's tonsil (Gram-Weigert stain).

FIG. 2.



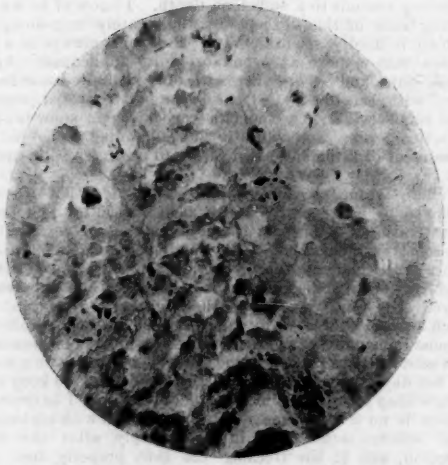
Bacilli in lymphoid tissue of a healthy rabbit's Peyer's patch (Gram-Weigert stain).

FIG. 3.



Bacilli in lymphoid tissue of a healthy rabbit's appendix (carbol-fuchsin decolourised in clove oil).

FIG. 4.



Bacilli in lymphoid tissue of a healthy rabbit's appendix (Gram-Weigert stain).

[4] A. Keith: THE LANCET, Jan. 18th, 1913, p. 167.

[5] Ledingham and Arkwright: The Carrier Problem in Infectious Diseases, 1912.

the frequent occurrence of healthy human carriers in various epidemics. In epidemic cerebro-spinal meningitis the carriers may be ten times as numerous as the cases of disease. The carriers in most infectious diseases are more or less immune. Sometimes they have had a slight inflammation of the circumpharyngeal ring of the lymphoid tissue, and they usually show hyperplasia of the tonsils and adenoids. Generally the specific organism is most easily cultivated from the tonsils of the carrier, and removal of tonsils and adenoids may occasionally be followed by its disappearance. At other times the operation is followed sooner or later by an acute attack of the disease for the first time (diphtheria, rheumatic fever,[6] and acute anterior poliomyelitis[7]).

Cathoire in his highly suggestive experiments tested the sera of ten healthy carriers in an epidemic of cerebro-spinal meningitis. He found no agglutinative phenomena (seeming to show that the diplococci had never invaded the blood stream), but he found a very high opsonic index, averaging 4·01 for the ten cases (the type of immunity being such as one might expect to result from the phagocytic activity of the subepithelial lymphatic glands). At first sight it would seem that the subepithelial lymphatic glands protect the individual against epidemic diseases, but do so at a great risk to the community. A brief consideration will show that this risk may easily be exaggerated. For the virulent organisms do not persist very long in the alimentary tract (apart from such accidents as, for example, a typhoid cholecystitis), and there are probably various expulsive and other methods by which the subepithelial lymphatic glands periodically change the contents of their crypts. Moreover, either because the most virulent organisms are ill-suited to a saprophytic existence, or because they are preferentially ingested by the lymphoid tissue, it happens that the strain of bacteria tends to become non-virulent. This has been shown more than once in the cases of convalescent diphtheria-carriers.

It is hoped shortly to publish further investigations on the mechanism and rate of absorption of living and of dead bacteria and of inert particles by the subepithelial lymphatic glands, with special reference to possible prophylaxis of certain infectious diseases.

I am greatly indebted to Professor A. E. Boycott for kindly allowing me to work in his laboratories and also to Mr. W. Manby for his skilful section-cutting and microphotography.

Pathological Laboratories, Victoria University, Manchester.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE OF A CASE OF TRAUMATIC ANEURYSM.

BY H. P. SYMONDS, F.R.C.S. EDIN.,
SURGEON TO RADCLIFFE INFIRMARY, OXFORD.

THE following case may be of sufficient interest to place before readers of THE LANCET.

The patient, a youth aged 18, was sent to the Radcliffe Infirmary on Jan. 31st, 1913, from the Abingdon Union Infirmary with a history of having accidentally wounded himself seven days previously by falling with an open knife in his pocket. He states that he was walking in the road, and while moving out of the way of a motor car he fell over some stones, the blade of the knife entering his chest. The knife had a blade about three inches long and half an inch in width. The blade did not enter far, and fell out of the wound itself. The patient's mother strapped his chest, and later took him to the Abingdon Infirmary, where he was detained.

On examination there was found to be a small incised wound about half an inch in length situated in the right pectoral region, just below and about an inch external to the nipple, and there was some slight discharge from the wound. A large tense swelling extended from the situation of the wound over the whole of the inner wall of the axilla, reaching in front to the nipple line and above almost to the clavicle. The swelling was very tender; it fluctuated, and could also be felt to pulsate. The pulsation was expansile. No radial or brachial pulse could be detected on this side. On auscultation over the tumour a systolic murmur could be heard. The patient complained of much pain radiating down the arm.

On Feb. 1st an operation was performed. A vertical incision about 3 inches in length was made over the tumour, extending up to the anterior folds of the axilla. On dividing the pectoralis major a large quantity of blood escaped under great pressure. The hæmorrhage, which was very free, was controlled by direct pressure, and the clot was turned out from the aneurysmal sac. On releasing the pressure the blood again began to flow. The structures in the axilla were isolated. The subscapular artery was discovered to be divided and had to be ligatured. The hæmorrhage, which was still very free, was found to be coming from the third part of the axillary artery. The vessel had been sliced in a longitudinal direction for about an inch. It was tied above and below and divided between the ligatures. The wound, which was septic, was plugged with iodoform gauze and the edges were drawn together with silkworm gut. On Feb. 2nd the plug was removed. There was a large amount of offensive discharge. The skin flaps were much discoloured. The wound was syringed with hydrogen peroxide. No pulse could be felt, but the circulation was well established. There was no sensation in the arm below the distribution of the circumflex nerve. The arm was completely paralysed. On the 3rd the stitches were removed. The muscle was sloughing and the discharge still very offensive. A large Gram-positive bacillus was found in the wound—not tetanus or anthrax. The wound was syringed daily with hydrogen peroxide and dressed with lactate of silver. On the 5th it looked slightly cleaner. A slough separated on the 6th and the wound looked better. The temperature was coming down. On the 9th the surface of the wound was granulating and there was very little discharge.

The patient remained in hospital until April 26th. By that time the wound had healed, but the process was slow owing to the lowered circulation. Sensation in the arm had returned to some extent, but the limb remained almost completely paralysed up to the date of discharge.

Oxford.

[6] F. J. Poynton: Rheumatic Fever in Childhood, Practitioner, February, 1913.

[7] Infantile Paralysis in Massachusetts, 1900 (Boston).

NOTE ON A CASE OF IMPACTED FRACTURE OF THE UPPER END OF THE HUMERUS.

BY G. DE B. TURTLE, M.D., B.S. DURH.,
M.R.C.P. LOND.,

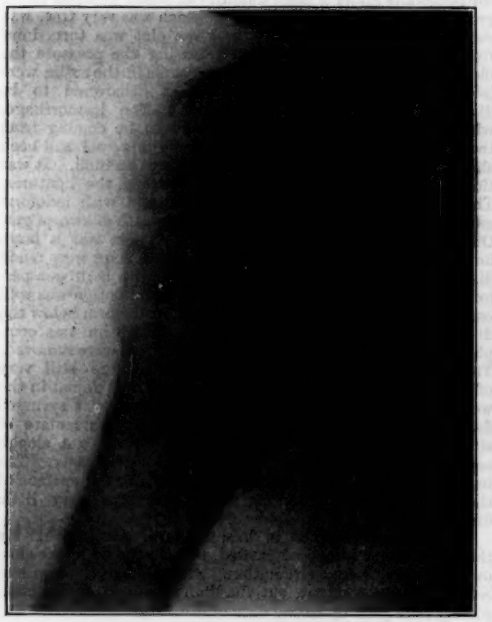
THE following case appears to me to be of sufficient interest to give a short extract.

A schoolboy, aged 13½ years, was brought to see me on April 8th for drooping of the left shoulder. The history was that three days previously, whilst in the gymnasium at school, he fell off a chair and hit his shoulder against a radiator pipe. It was not particularly painful at the time, and as there was no apparent injury medical aid was not sought. When the mother (who had studied medicine some years previously) met him at the station three days later on his return from school she noticed some drooping of the left shoulder, and brought him to see me the same afternoon.

On examination it was found that the left deltoid was completely paralysed to voluntary movement, but that there was a slight reaction to a faradic current of medium strength. Thinking that the circumflex nerve had probably been injured in the neighbourhood of the shoulder-joint, I sent the patient to Mr. Archibald Reid to be X rayed, with the result seen in the illustration. The fracture, which was impacted, had taken place through the upper end of the diaphysis, the junction between the epiphysis and the diaphysis being clearly seen above the line of the fracture. Sir Watson Cheyne saw the boy with me two days later, and as the movements of the joint were quite free except for some slight limitation upwards and the voluntary power in the deltoid was commencing to return, he concluded that the circumflex nerve had only been temporarily injured either by bruising or stretching, and therefore the only treatment advised was putting the arm in a sling with gentle massage and passive movements night and morning. A week later

voluntary power had completely returned in the deltoid, and the ultimate amount of shortening on the affected side only amounted to a quarter of an inch.

In "Keen's Surgery," vol. ii., reference is made to this particular class of fracture in the diaphysis, and there is a skiagram showing the condition exactly as it occurred in this case, except that the diaphysis and epiphysis are not in a line, as they are in the accompanying illustration. In



From a skiagram showing impaction.

"Rose and Carless's Surgery" reference is also made to the likelihood of the circumflex nerve being injured in fractures in this situation, and in this case is of interest, for had it not been for the bruising of the nerve and the subsequent paralysis of the deltoid muscle the fracture would probably have remained unrecognised.

Cambridge-terrace, W.

A CASE OF OSTEOMYELITIS OF THE SPHENOID BONE FOLLOWING REMOVAL OF ADENOIDS.

BY R. H. H. JOLLY, M.B., B.S. LOND., D.P.H.,
RESIDENT MEDICAL OFFICER, VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

IN view of the frequency with which an operation for the removal of adenoids is performed serious septic complications are fortunately exceedingly rare, but septicæmia, broncho-pneumonia, phagedæmic ulceration, and cavernous sinus thrombosis have been recorded on a few occasions. The following case, therefore, appears to me to be of considerable interest.

A boy, aged 5 years, was admitted to the Victoria Hospital for Children, Chelsea, in November last with the history that 17 days previously he had had his tonsils and adenoids removed at another hospital. Four days after the operation he lost a considerable amount of blood from the nose and mouth, and there had been slight hæmorrhage on each succeeding day. He had had severe headache for the previous week, and the day before admission his eyelids had commenced to swell. There was no family history of hæmophilia to be obtained. On admission the child was obviously very ill, and there was great pallor of the skin and mucous membranes. There were very marked proptosis of both eyeballs and considerable œdema of the eyelids on both sides. The tonsillar fossæ both looked quite clean and healthy. The percussion note was impaired over the base of the right lung and the breath sounds over this area were faint. The liver and spleen were slightly enlarged. The urine was normal. The blood presented a condition of simple anæmia with a slight degree of leucocytosis. The temperature was high, and varied between 102° and 105° F. The pulse was 140 and the respirations were 56. The boy had a rigor shortly after admission, and gradually became comatose and died four days later.

The following is a brief account of the conditions found at the post-mortem examination.

The dura was firmly adherent to the skull over the posterior part of the cerebrum. On removing the skull-cap the meningeal vessels seemed moderately dilated, and over the whole surface of the brain the membranes were dull and in places irregularly thickened. The pia-arachnoid meshes contained a turbid fluid, which in the deeper sulci formed a definite collection of purulent material. On removing the brain the meshes at the base were filled with an opaque, turbid, purulent fluid, and the whole area showed irregular collections of lymph and deposit, which extended upwards into the Sylvian fissures. The sella turcica was full of pus, and there was a definite connexion along the optic nerve on the right side with a large pus collection at the back of the right orbit. There was a similar less marked collection in the left orbit. The entire body of the sphenoid bone was transformed into a soft, broken-down mass of caseous material, with numerous small foci of pus scattered throughout it, and through this a definite connexion could be traced to the posterior nasopharynx. The cavernous sinuses each contained a purulent thrombus, but the petrosal sinuses and the lateral sinuses were normal. The tonsillar fossæ were fairly normal, but the upper part of the posterior nasopharynx was full of a foul, sloughing mass of purulent matter. There were pyæmic infarcts in both lungs and a purulent exudate in both pleural cavities. The liver and spleen were enlarged and pale, and the heart muscle showed pigmentary degeneration.

The appearances were, therefore, those of an infection starting in the nasopharynx, apparently after the extirpation of adenoids, spreading up the sphenoidal cells and bone to the brain and invading the neighbouring parts, orbits, cavernous sinuses, and thence setting up a general pyæmia, with foci in the lungs. In this connexion it is, perhaps, worth noting that, owing to the relative thinness of the basi-sphenoid from above downwards in children, and the close proximity, therefore, of the pituitary fossa and the roof of the nasopharynx, it is much easier for an infection starting in the above manner to reach the cranial cavity in a child than in an adult. When the boy was admitted he was apparently suffering from some septicæmic condition, and the marked proptosis of the eyes and the œdema of the lids suggested cavernous sinus thrombosis. The repeated hæmorrhages were probably due to the separation of sloughs in the nasopharynx and accounted for the severe anæmia, and this anæmia, by weakening the resistance of the patient, predisposed to further infection and thus set up a vicious circle.

I am indebted to Dr. J. Walter Carr, senior physician to the hospital, under whose care this case was, for permission to publish these notes.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—The annual general meeting of this society will be held at 11, Chandos-street, Cavendish-square, London, W., to-day (Friday, June 20th), at 8.30 P.M.

LITERARY INTELLIGENCE. — Messrs. Baillière, Tindall, and Cox announce for immediate publication a book by Mr. J. E. Adams and Dr. M. A. Cassidy on "Acute Abdominal Diseases." The novel feature of this work is that it is written by a physician and a surgeon in collaboration. The same firm publishes this month a work on "Surgery of the Eye" by Dr. E. Torok and Dr. G. H. Grout, of the New York Ophthalmic and Aural Institute; and are adding another volume to the "Students' Aids Series," called "Aids to Public Health." This is by Dr. D. Sommerville, and will probably be issued this month.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF LARYNGOLOGY.

Exhibition of Cases.

A MEETING of this section was held on June 6th, Mr. HERBERT TILLEY, the President, being in the chair.

The PRESIDENT'S first case illustrated the kindly effect of time in obliterating extensive frontal scars after an operation 13 years ago for Chronic Frontal Empyema. Another case of his exhibited a Pharyngeal Ulcer, the upper edge of which was obvious above the arytenoids by the indirect method; the occipital glands were enlarged.—Mr. W. D. HARMER considered the ulcer to be of malignant character.—Dr. G. WILLIAM HILL advised a very extensive operation as the only hope.

The PRESIDENT'S case of Small Symmetrical Swellings on the Anterior Aspect of the Arytenoids in a man who had been treated for definite syphilis, Dr. H. J. DAVIS considered to be an instance of pachydermia.—Sir STCLAIR THOMSON recognised the condition as syphilitic pachydermia, and advised rest.—Dr. W. JOBSON HORNE would remove the nodules.—Dr. J. DONELAN considered the nasal obstruction present to be a factor.

Dr. H. LAMBERT LACK exhibited a Nasal Osteoma recurrent in the region above the inferior turbinal of a woman aged 31. Nine years ago a large osteoma had been ablated by the curette.—Dr. W. H. KELSON related the similarity of osteomata occurring in Africa, which were also soft and could be removed by the curette.—Dr. J. W. BOND advised that the anterior wall of the antrum should be removed to define the site. It might be ultimately necessary to remove the upper jaw.—In this Dr. HILL agreed.—Mr. E. D. D. DAVIS alluded to the different facies of hyperostosis cranii.—Sir STCLAIR THOMSON recommended the advantage of Moure's operation, in which the bone lying between the nose and antrum only is removed through a skin incision, as an advance on removing the upper jaw in dealing with growths in the region mentioned.—Dr. LACK favoured turning up the lip previously to dealing with the growth.

Dr. H. J. DAVIS exhibited a chart and notes of a case of Cavernous Thrombosis following Tonsillitis in a boy aged 10, with fatal termination in 18 days. Antistreptococcus serum was injected on the ninth day, and only staphylococcus albus resulted from a blood cultivation. The cavernous symptoms were definite on the fourteenth day. Infection had probably taken place by the facial vein. Incisions and doses of liq. ammoniæ fort. (5 minims in water every two hours) were of no avail, though such treatment diminished the tendency to thrombosis. The tonsillitis and thrombosis were left-sided only.—Mr. J. F. O'MALLEY regarded the sphenoidal venous system as the route of infection, and in this Sir STCLAIR THOMSON concurred, adducing the evidence of sphenoidal sinus cases.—Dr. H. W. FITZGERALD POWELL also instanced the extension of thrombosis to the cavernous sinus along the petrosal sinus in petrous necrosis.

Dr. H. J. DAVIS also brought a man with Unilateral Paralysis and Muscular Atrophy of the Left Cord, Tongue, and Palate. The patient attributed the trouble to a blow on the head, but a syphilitic meningitis seemed a more probable cause.

Dr. KELSON'S case of Perforating Ulcer of the Palate in a man had been treated with three doses of neo-salvarsan, receiving 2·4 grm. in all. Wassermann's reaction was negative. He was now taking mercury and iodide, but progress was *nil*.—The PRESIDENT related his case where chronic ulceration was found to be due to glanders.—Dr. KELSON'S case of lupus of the gums and pharynx had improved with arsenic.—The PRESIDENT pointed out the difficulty of differentiating between the lupus and pyorrhœa of the gums.

Dr. HORNE exhibited a man, aged 36, with a prominent Superior Ventricular Band concealing the vocal cord, and raised the question whether this was due to early tuberculosis of the laryngeal sac or a deformity. Examination of the sputum and chest was negative.—Sir STCLAIR THOMSON considered the larynx to be free from disease.—Dr. DAN MCKENZIE regarded the appearance as due to a prominent superior band, while in Dr. HILL'S opinion the sac was affected.

Dr. DONELAN exhibited a case of Paresis of the Superior Laryngeal Nerves in a man aged 25, in the course of disseminated sclerosis from plumbism. In this stage the circoid was only slightly approximated to the thyroid during phonation, the aryteno-epiglottidean ligaments were slack and the glottis wavy. Abduction and adduction were unimpaired; the voice was loud and rough, but deficient in tone.

Dr. DONELAN also exhibited a Forceps with circular grooved grips for use in enucleation of tonsils.

Dr. MCKENZIE brought a case of Sinusitis Exulcerans of the Frontal Sinus. At the first operation, which was directed to relieving the pus tension, in stripping up the frontal periosteum the elevator passed through the soft bone, sinus and posterior wall through the dura, and inflicted a 3 mm. wound. The anterior wall was removed and the dural wound opened and a gauze drain inserted. As progress was good, six weeks later an attempt was made after a modified Killian operation to establish an infundibulum, which caused great reaction and necessitated a return to drainage through the skin incision. Subsequently the removal of a track leading to the optic foramen and softened bone in the outer angle resulted in healing.—Dr. H. J. DAVIS remarked that an attempt to make an infundibulum was not really necessary, but Dr. MCKENZIE considered drainage of paramount importance.

Dr. MCKENZIE'S case of death after tonsillotomy in a boy, aged 9, who had suffered with subacute middle-ear catarrh was discussed. Three days after the operation an incision into the œdematous neck allowed fœtid pus to be delivered by Hilton's method for the deeper planes. Two days later pneumonic symptoms appeared with fatal results. The organisms from the pleural and cervical cavities were similar to those indigenous in the mouth such as spirochæta dentium. The teeth were sound, but the usual precaution of using a lysol mouth-wash had been omitted. The case appeared to be a septicæmia from mouth infection.

Mr. DAVIS exhibited a Large Polypus which he had removed from the tonsil of a man aged 21.

Mr. J. H. CONNOLLY brought a woman with a web passing across the vault of the nasopharynx between the Eustachian cushions. The possibility of a cicatrix consequent on syphilitic ulceration was suggested.

Dr. E. A. PETERS exhibited a case of Left Unilateral Paralysis of the Recurrent Nerve (complete) in a man, aged 45, suffering from a malignant growth of the œsophagus 8½ inches from the teeth; the onset was very sudden and of only 20 days' duration.—The PRESIDENT related that a patient, the victim of the same disease, noticed his voice give for the first time when joining in popular applause.—Dr. HILL remarked that the recurrent nerve was affected only late in the disease.

Dr. MCKENZIE exhibited a case of thyroid disease in which malignant disease was suspected from the hardness and symptoms of retrosternal pressure. At an operation on a somewhat similar case a dermoid cyst was the cause of the compression.—Mr. HARMER advised the removal of the left lobe with a view to relieve pressure, when an opportunity of examining the growth would present itself.

Dr. MCKENZIE also exhibited a girl, aged 18, from whose pharynx and palate an endothelioma had been removed, but had recurred.—The PRESIDENT had found these growths so malignant that he almost doubted the advisability of interfering with endotheliomata where the symptoms of deep involvement—e.g., mental anæsthesia, fixation of the palate, and earache—were present.—Mr. HARMER had used diathermy with varying results.—Dr. HILL recommended the use of 200 mgr. of radium.

Mr. A. KISCH showed a case of Ulceration of the Pharynx, probably syphilitic, but atypical in character.

Dr. HILL exhibited his case of Stenosis of the Pharynx, in whom perichondritis had supervened, causing laryngeal stenosis. A pneumococcal origin was suggested.

Dr. HILL also exhibited the brain removed from his case of adenoma of the pituitary body which was attacked by the nasal route. There was a hæmorrhage into the adenoma, and the compression of the convolutions of the brain from damage to the intercavernous veins was well marked.

Mr. WALTER G. HOWARTH presented a Tumour of the Superior Maxilla in a child, growing from the anterior wall

of the antrum. Microscopic sections revealed chronic osteitis.

Mr. W. M. MOLLISON exhibited a man, aged 71, with two Lesions, one a globular swelling under the tongue, hard, movable, and painless, the other an ulceration of the hard palate. An enlarged gland could be felt over the tonsil.—The PRESIDENT considered the condition of the palate to be one of early malignancy, and mentioning the variety of forms early epithelioma of the mouth assumed, recalled Mr. Charters J. Symonds's case of vesicular ulceration of the hard palate. It was also suggested that the sublingual tumour presented an instance of delayed ulceration of a carcinoma.

SECTION OF OPHTHALMOLOGY.

Exhibition of Cases.—Education of High Myopes.

A MEETING of this section was held on June 4th, Sir ANDERSON CRITCHETT, the President, being in the chair.

Mr. J. COLE MARSHALL showed a case of uncommon type of Cataract in a child.

Mr. N. BISHOP HARMAN brought forward a case of Melanotic Growth which seemed to originate in the iris.—Mr. W. H. JESSOP inclined to the view that it sprang from the ciliary body and pushed the iris on one side, causing flattening of the edge of the pupil. He agreed that it was a melanotic sarcoma.—Mr. E. TREACHER COLLINS mentioned a case of melanoma of the iris, malignant characters having arisen later. He agreed with Mr. Jessop that in the present case the origin of the growth was probably the ciliary body.

Mr. HARMAN showed a case of Spontaneous Recovery from Detachment of the Retina. The patient had had complete detachment for three months, during which she was in bed three times; she refused operation. Shortly after that date the sight suddenly came back, and now there was no trace of any detachment; all that could be seen were one or two cobwebby lines in the disc. She had 6/36 one-letter vision. She had 10 D. of myopia, but there had been no accident of any kind. She was a cook, and one February night she walked out from a hot room to the cold air, and her description was that something black suddenly fell over her eye, and she could not see anything more with it.—Mr. W. G. GOUDIE described the case of a child who came to the Glasgow Eye Infirmary with detached retina, and in whom three months later the retina became reattached. Two months afterwards it again became detached, only to again become attached. There was fair vision and no iritis.—Dr. RAYNER D. BATTEN said he had a case with nearly 20 D. of myopia and detachment. Detachment occurred also in the other eye, and the patient was so blind for a year or two that she had to be led about. Later she came and said she saw a glimmer of light, and from that date her sight began to return; she accepted her lenses again, and was able to find her way about. He believed her vision was 6/24.—Mr. J. HERBERT PARSONS said he, like others, was sceptical about spontaneous recovery from detachment being possible until he had a case which altered his view. It occurred in hospital, and though a little later the patient was very carefully examined no trace of the detachment could be detected, not even streaks to mark what had occurred; 18 months later, however, he came with a relapse.—Mr. A. MACNAB described a case of double detachment which underwent spontaneous cure. In another case in which the condition occurred there had been iridocyclitis, and he believed it was due to tubercle of the eye. There was a large vitreous opacity and very extensive detachment; the eye was very soft, being practically devoid of tension; the cornea could be seen to be dull and crinkled. Vision was reduced to mere perception of light. He gave tuberculin and a vaccine cultivated from the patient's own coli bacilli. For four months now the tension had been normal and the patient could count fingers at 5 or 6 metres.—Mr. JESSOP reminded the meeting that when the Ophthalmological Society discussed the subject only one case was reported as having been cured, and that was spoken to by Mr. E. Nettleship and Sir John Tweedy. Many cases of cure of the condition had been reported, but they had not been lasting.—Mr. A. W. ORMOND did not share Mr. Jessop's scepticism, and described a case of his own in a patient who had been treated by glasses for high myopia, and a little later she said her vision suddenly went in one eye. She had obvious detachment of the outer side of the retina. He did a sclero-puncture and removed some fluid, and in three days the detachment had disappeared. He had seen her a number of times since, and the attachment remained absolute. Vision was 6/36.—Mr. LESLIE J. PATON reminded the meeting that Mr. Harman's case was one of spontaneous reattachment, not after operation. He was more optimistic than Mr. Jessop on the subject. He had seen a case of 35 years' standing cured after operation, though it was a double case. In another case, that of a lady with 15 D. of myopia, and vision 6/18 in either eye, there was detachment in one eye, resulting in blindness, and that was followed by detachment in the other eye. After operation her vision was better than before the detachment. In the case of a girl with detachment she was put on her back and treated with mercury and iodide, and in three months the retina had become reattached, leaving only a curious distribution of retinal pigment. In a series of 28 cases of detachment which he had looked up 7 were cured.—Mr. NETTLESHIP and Mr. JESSOP suggested that in the near future a further discussion on the subject should be held by the section. Mr. Nettleship said he had records in his case-books of several cases of detachment which had recovered.

Mr. J. F. CUNNINGHAM showed a case of Nystagmus with Uniocular Fixation.

Professor WORTHINGTON, F.R.S., gave a contribution and demonstration on an Experimental Study of Normal Monocular Polyopia.

Mr. G. H. POOLEY showed a case of Cyst of the Iris and Mr. GOUDIE a case of Corneal Ulceration, the discharge from which contained fusiform bacilli and spirilla resembling those found in Vincent's angina.

Dr. A. FREELAND FERGUS presented a communication entitled "Glaucoma Associated with Venous Congestion."

Mr. HARMAN submitted a paper on the Education of High Myopes, the experience of four years. It was an account of the working of a scheme for the safe education of children with such a degree of myopia that they were not fit for the ordinary school curriculum, yet were not bad enough to require the teaching for the blind. In any scheme of compulsory education there must be provision for misfits, and for none was this more necessary than for high myopes, who often had great intelligence, and hence were in danger of damaging their delicate eyes by over-application. He explained the method of selection of cases and their transfer to centres for special instruction. The curriculum fell into three parts: (1) Oral, the children being associated with scholars of the ordinary school for subjects which could be taught orally; (2) literary work, which was learned, not by books, pens, or paper, but by blackboard and chalk, the writing to be done free-arm fashion; and (3) a full use of the handicrafts which would develop attention and concentration with a minimum use of the eyes. His conclusion was that a suitable system of teaching myopes could be arranged and satisfactorily carried out. Such classes should not be independent units nor be associated with existing blind schools, but should be integral parts of existing elementary schools. Their success depended almost wholly on the intelligence and initiative of the teachers, who were required to do real teaching. The training of these children should be general, not merely technical. The classes should be of small size, with an optimum number of a dozen per teacher, and there should be a standard of visual acuity of 6/18 with suitable glasses. The children should also be under regular medical supervision during the whole of their school life.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Enucleation of the Tonsils.

A MEETING of this society was held on June 6th, the President, Dr. G. P. SHUTER, being in the chair.

Mr. T. JEFFERSON FAULDER read a paper entitled "Enucleation of the Tonsils." He began by referring to the great revival of interest in the tonsil and the widespread controversy as to its proper treatment when diseased. He had ascertained that at least 40,000 operations for tonsils and adenoids were performed in the London hospitals alone during the year 1909, and it was therefore important to have an exact appreciation of the indications for operation and the best method of procedure. He had

come to the conclusion that if it was found necessary to interfere with the tonsil surgically it should in all, or nearly all, cases be completely removed. By complete removal he meant removal of the faucial part of the tonsil with its capsule, the lingual prolongation not being interfered with. At the risk of seeming elementary it was necessary to go through the indications in some detail. Follicular and other forms of tonsillitis seemed to resemble appendicitis. The patient might have an accidental attack of inflammation which never recurred, but if it did recur they could infer the presence of some persistent cause. Follicular tonsillitis was most prevalent in children up to puberty, and it suggested an attempt of Nature to prevent a general infection. It often succeeded at the price of hypertrophy. Quinsy or peritonsillar suppuration, on the other hand, was most frequent in the period following puberty when the tonsil ought to be involuting. In nearly all these cases the upper cervical glands were infected, which pointed to a failure of the first line of defence. Quinsy appeared always to start at the upper pole of the faucial arch, and the tonsil in this situation retained its primitive adenoid structure quite late in life. Adenoid tissue might be a good protective, but when it involuted and had the labyrinthine structure of the tonsil it was apt to retain infection and clearly became a source of sepsis. In regard to these first two affections of the tonsil Mr. Faulder related the history of a patient who from childhood suffered from repeated attacks of follicular tonsillitis every year to puberty and after, with the result that the tonsils were by that time enormously hypertrophied. At the age of 17 a piece of each tonsil was removed with a bistoury. The immediate result was an attack of tonsillitis, and future attacks were not diminished. Three years later another piece of tonsil was removed—this time with a guillotine. The sequel again was curious, for it was an attack of tonsillitis which ended in a quinsy. Thereafter quinsy recurred every year for a long time until the patient "grew out of it." This kind of history was not at all uncommon. Chronic and subacute inflammations of the tonsil were often merely a part of a general oral sepsis. They occurred also in habitual mouth-breathers, and frequently resulted from previous operations. The tonsils in question were generally fibrotic, not much enlarged, and their crypts not very much in evidence, although they nearly always contained collections of matter extending right down to the capsule. Often also these tonsils were adherent to the pillars so that it was difficult to say where tonsil began and pillar ended. Cervical adenitis in relation to the entrance of the tubercle bacillus into the system was a large question outside the scope of his paper, and it sufficed to mention that miliary tubercles and independent giant cells had frequently been found close underneath the capsule. Enlargement of the cervical glands was exceedingly common in association with diseased tonsils, 90 to 95 per cent. in hospital cases, and glands palpable in the neck had to be considered pathological. Some when first seen were easily diagnosed as tuberculous, but in most cases there was a doubt. He thought all ran some risk of gland tuberculosis, and it was never safe to promise disappearance of glands after operating on tonsils when the gland infection was already massive. As regarded general infections, rheumatism required mention, as a large number of physicians were of opinion that it entered the system commonly by way of the tonsils, but he had found no way of distinguishing these tonsils from others. The part played by the tonsil in the specific fevers, such as diphtheria, scarlet fever, and measles, still required investigation. In obstruction to deglutition or respiration, where the only symptom was obstruction, partial removal might meet the case, but the result of partial removal was often an attack of follicular tonsillitis which afterwards recurred frequently, and the remains of the hypertrophied tonsils were apt to grow to and beyond their original size. Where vocal obstruction was caused by large tonsils resonance was undoubtedly improved by the removal of any projection, but if any large mass was left embedded after operation the improvement was not so striking as the movements of the soft palate remained hampered. Voice trainers whom he had consulted agreed on this point. Eustachian obstruction and middle-ear disease were produced by pathological conditions of the tonsils, quite apart from the presence of adenoids, either by extension of catarrhal processes to the post-nasal space, by narrowing of the naso-pharynx, or by embarrassing the muscles which worked upon the Eustachian tubes, and the large embedded tonsil appeared, on the whole, the variety most often responsible for this result. Ozæna, offensive breath, and subjective sensations of evil tastes and smells sometimes originated in the tonsil. In such cases the tonsil usually contained sinuses full of decomposition products, and it was a simple matter to examine its recesses with a probe. The anatomy of the supra-tonsillar fossa was a matter of considerable importance, as it was much misunderstood. This fossa was a recess in the tonsil tissue itself, contained within the capsule, and was often more or less completely hidden by the arch between the faucial pillars. The structure of the tonsil in this situation resembled post-nasal adenoid tissue and was arranged in folia separated by fissures going down nearly to the capsule, in contrast to the structure of the free part of the tonsil which was more solid and homogeneous with a surface broken only by the so-called crypts. If, therefore, a formation of this description became a septic focus it was surely illogical to leave any portion behind, and he strongly insisted upon the importance of recognising and removing the embedded upper pole of the commonest type of tonsil in any operation undertaken. Perhaps one of the most urgent reasons in support of his proposition was the fact that under previous conditions repeated operations were necessary. He was called to operate upon many cases where two, three, and even four operations had already been performed, and to his mind this constituted one of the most serious indictments of all against partial removal of a condemned tonsil. As he had shown, partial removal was liable to set up recurrent tonsillitis and rapidly recurring hypertrophy in patients who had never suffered from sore throat before, and it was the recognition of this very fact which led to the evolution of the various methods of enucleation. With regard to the method best adapted for carrying out removal of the tonsil it must be observed that the surgeon's object in using the guillotine was always to remove as much of the tonsil as possible. In using the guillotine in the original way it happened, not uncommonly, that so much tonsil was removed as to amount to enucleation. For this result, however, a very special kind of tonsil was essential—namely, a tonsil pedunculated, projecting, and not at all embedded—one with a capsular area very much less than that of the free surface, a variety relatively uncommon. But enucleation of embedded tonsils could be carried out with the guillotine as well as by any other method. All methods aiming at complete removal, whether by volsellum and forceps, wire snare, scissors, periosteal elevator, blunt knife, or guillotine, were dissection methods, and he maintained that dissection by the guillotine had several advantages of its own. It took no longer to remove completely both tonsils by this method than it did to remove pieces of them. No assistant was required, no prolonged sponging was necessary, and the advantages of a short anæsthesia were obvious, as no operation for the total removal of the tonsil could be carried out efficiently without muscular relaxation. Anyone who tried to get the tonsil through the ring against the resistance of a rigid palate was very apt to cause bruising with subsequent sloughing of the tissues. Mr. Faulder having shown properly adapted guillotines with blunted edges, and specimens of tonsils he had removed, then demonstrated the principle of the method of operating, as introduced by Sluder, with the aid of a phantom. The course of an ordinary case was as follows. In from 24 to 36 hours the raw surface became covered with a thick deposit of fibrin. Granulations formed under the fibrin which gradually disappeared, and healing was usually complete in ten days. There might be slight pain on swallowing for any period up to three days, but sometimes pain was absent altogether. The convalescence in the vast majority of cases was easier than it used to be when the tonsils were merely cut. The explanation was simple, and had reference to the absence of traumatic tonsillitis. Objections to total removal with reference to the hypothetical internal secretion of the tonsil were next dealt with, and the question of the protective value of a diseased tonsil appeared to have much the same academic value. He could not help thinking that this theory of protection arose from the appearance of the hypertrophied tonsils projecting in the narrow fauces like fortified Gibraltars, but he had come to the conclusion that they more resembled Scylla and Charybdis. Though the tonsils might act as filters they

very easily became choked filters, a danger to sanitation. Finally he took up the question of post-operative bleeding. He was satisfied that the bleeding during and after the operation under consideration was very much less than that after tonsillotomy with a sharp instrument, and that patients lost less blood from enucleation by this method than by any other. Secondary hæmorrhage from the third to the fifth day had occurred but was excessively rare. As occasional cases of bleeding occurred whatever operation was performed it was necessary to be prepared for them, and his observations pointed to the adenoids being the source of trouble much more frequently than the tonsils. A firm pad of gauze damped with adrenalin was usually sufficient if held in position for a few minutes. The tonsil clamps shown were most efficient, although uncomfortable. Metal clip sutures might be used for clipping the pillars of the fauces together, or else for clipping the pillars to a roll of gauze placed in the tonsil cavity. What he had sought to do in his paper was to press for careful selection of cases, but at the same time for more thorough treatment. After all, what was the aim of tonsillotomy? It was surely to remove as much of a diseased tonsil as possible. All modifications of the guillotine which had been introduced since Mackenzie's time had that object in view. The recent advance consisted not so much in modifications of the instrument as in the manner of using it. The difference between efficient tonsillotomy and tonsillectomy was really a very small one, but the possibility of efficient tonsillotomy by the old method was limited to certain uncommon types of tonsil.

The PRESIDENT thanked Mr. Faulder for the excellent description he had given of the operation. Sluder's method was a less serious procedure than dissection, and appeared to achieve equally satisfactory results in most cases, but where it might be necessary to remove the whole tonsil, as in the case of diphtheria carriers, a dissecting operation was indicated. One of the safest anæsthetics for rapid enucleation was ethyl chloride, but it had certain disadvantages, and a mixture of chloroform and ether often proved best.

Dr. H. J. DAVIS considered the liability to hæmorrhage was always greater with enucleation. He strongly recommended Sluder's operation as performed with a blunt-bladed tonsillectome, and showed that surgeon's instruments presented to him by the inventor. They were far and away the best of the many instruments he had used for enucleating tonsils.

Dr. M. E. LEICESTER showed a guillotine he had designed for this operation. He agreed with Mr. Faulder that in operating on children no special instrument was required so long as the one selected was the right size, but in adults where previous tonsillotomy had resulted in repeated attacks of tonsillitis the tissues were thick and tough and required a specially adapted instrument.

Mr. J. D. E. MORTIMER remarked, as an anæsthetist with considerable experience of the operation, that ethyl chloride or nitrous oxide and oxygen generally gave sufficient length of anæsthesia, but could not be relied upon always to do so. He had found the former usually gave complete relaxation. A mixture of chloroform and ether answered well, but unmixed chloroform much increased the dangers.

Dr. A. B. KINGSFORD agreed with the remarks of the previous speaker. The profound anæsthesia required was not in itself very dangerous, unless unusually prolonged, provided that nothing at any time encroached on the airway. Apart from artificial respiration there was nothing like a cold stream of oyxgen for restarting suspended respiration. Atropine was useful as a preliminary for limiting secretion and the risk of vagus inhibition.

Mr. O. L. ADDISON saw no reason for leaving any part of the tonsil, and thought the only satisfactory way in the majority of cases was to remove the entire tonsil with its capsule and lingual prolongation by the blunt dissection method originally introduced by Mr. G. E. Waugh.

Mr. H. TYRRELL GRAY agreed with Mr. Faulder that complete removal of a diseased tonsil was essential, but enucleation with a guillotine lacked precision, and any method which failed to remove the lingual prolongation was unsound. None of the recent innovations on Waugh's method of blunt dissection appeared adequate. Chronic cervical adenitis was less often tuberculous than was at one time thought, and in a large proportion of cases was due to chronic septic infection. The glands subsided promptly when the source of this was completely removed. The association of rheumatism in its many forms with tonsillitis was familiar, and here again a complete operation was essential.

Mr. J. F. O'MALLEY recorded his high appreciation of Mr. Waugh's operation, but did not consider it essential, in the majority of cases, to remove the process of lymphoid tissue which connected the tonsil with the tongue, and did not like the depth of anæsthesia required in that operation. He found gas quite efficient for enucleating with the guillotine when time was an object, but agreed with the President that a mixture of chloroform and ether was excellent and safe. He described his own method of operating, and calculated on complete success in 95 per cent. of cases. Since operating by this method on about 1200 cases in children under 14 years of age and on 60 adults he had not seen any tonsillar bleeding which called for attention.

Mr. FAULDER, in his reply to comments, mentioned that the percentage of successful cases depended to some extent upon the selection, but he agreed with those speakers who put it at not less than 90 per cent.

Reviews and Notices of Books.

Diabetes, its Pathological Physiology. By JOHN J. R. MACLEOD, M.B., Professor of Physiology, Western Reserve University, Cleveland, U.S.A. London: Edward Arnold. 1913. Pp. 224. Price 10*s.* 6*d.* net.

THIS is the latest addition to the series of International Medical Monographs, and its subject-matter formed the theme of eight lectures delivered during the summer of 1912 in the University of London. It should be pointed out that the problem is not studied directly from the practitioner's point of view, nor, indeed, is any attempt made to review the whole field of diabetes. Attention is given only to those investigations that have a more or less direct bearing on the nature of the abnormal conditions in the animal body that are the cause of the disease. The researches of the author and his collaborators form the basis of the book, although the work of other observers has been incorporated. Believing that the early diagnosis of incipient diabetes is important, the author devotes the first chapter of 22 pages to the Sugar of Normal Urine and the methods of determining the presence and amount of reducing substances in the urine. "As the matter stands at present," he says, "we must conclude that there is no unassailable evidence that dextrose is a normal constituent of normal urine." In practice at least two tests should be applied in every doubtful case of glycosuria. For ordinary work the tests of Nylander and of Benedict are the most serviceable. If the reaction is doubtful, ferment some faintly acidified urine for 24 hours with yeast—brewer's, not baker's yeast—and then filter and reapply the test.

Sugar in the Blood is next dealt with. The method of Rona and Michaelis for precipitation of the proteins is recommended, as none of the sugar is carried down. It is the sugar present in solution in the plasma in hyperglycæmia, rather than that in the red corpuscles, which is important in regard to urinary sugar and tissue metabolism. As the concentration of the sugar in the blood is fairly constant—like the temperature and the CO_2 tension—this constancy represents a reciprocal relationship between production and loss, and the question is raised as to the "nerve control of the sugar content of the blood." The process of sugar formation from glycogen is called the "glycogenolytic process." That the amount of sugar in the blood is increased after certain injuries to the nervous system is well known. What, however, is the cause of the hyperglycogenolysis? The view has recently been advanced that the direct cause of the hyperglycæmia which follows

piqûre is a hypersecretion of adrenalin into the blood. The author gives an account of his experiments on this subject, and he finds that it cannot be merely because of an increased secretion of adrenalin into the blood that stimulation of the splanchnic nerve produces hyperglycæmia; he concludes that the only possible explanation is that the glycogenic function is under a direct nerve control, which is dependent on the presence of a certain amount of adrenalin in the blood. Stimulation of the hepatic plexus produces hyperglycæmia when the adrenals are intact, but not when these organs have been removed. "In the entire absence of adrenalin from the blood it is impossible to excite hyperglycogenolysis by stimulation of the nerve-supply to the liver (*piqûre*, splanchnic stimulation, hepatic nerve stimulation)." There is a possible exception—viz., hyperglycæmia produced by diuretin.

The Relationship of the Ductless Glands to Sugar Metabolism is next considered. As to the pancreas, its influence is probably due to an internal secretion. In diabetic blood experiments go to show that some hormone necessary for the direct utilisation of dextrose by the tissues is absent. The internal secretion of the pancreas is not derived solely from the isles of Langerhans; the acini may also be its source. The parathyroids "prevent the accumulation of excessive amounts of dextrose in the organism." The thyroid has no direct influence on carbohydrate metabolism.

Over 60 pages are devoted to the Glycogenic Function of the Liver, about one-half to glycogenesis and the remainder to glycogenolysis. Naturally the methods of estimating the amount of glycogen in the liver require careful scrutiny. During its deposition the distribution of glycogen over the liver is practically uniform. It would appear, however, that there are variations in glycogenolysis. The sources of glycogen are next considered, and experiments are cited to show that it is possible that the isolated mammalian liver can form glycogen. The liver of an animal building up glycogen from formaldehyde, were it realised, would, in the author's opinion, constitute one of the most important discoveries of biochemistry, and we must agree with him. The gradual conversion of liver glycogen into dextrose by glycogenase, the distribution and seat or seats of formation of this ferment are next considered, and it appears that there is more glycogenase in the blood than in an equal volume of the liver. The balance of evidence favours the view that the pancreas is the seat of production of the glycogenase of the blood.

Next, the author deals with the probable cause of hyperglycæmia in various forms of experimental diabetes. Amongst these causes are the asphyxial condition, which excites the glycogenolytic process in the liver, an excess of sodium salts in the blood, anæsthesia (especially that induced by ether), phosphorus poisoning, hæmorrhage, and muscular exercise. That the animal body can assimilate large quantities of sugar is well known, and there are at least three stages at which the sugar is delayed, so preventing its overflowing into the urine: (1) liver (converted into glycogen); (2) tissues; (3) kidneys. The effects of different sugars administered subcutaneously, by injection into a vein, and by the mouth are set forth, due regard being had to the chemical constitution of the sugars concerned. The final question raised is the formation of carbohydrate—especially dextrose—out of fats and proteins—what the author calls "glyconeogenesis." For the study of this problem cases of experimental diabetes mellitus, phlorhizin and pancreatic diabetes, were especially observed, and the author does not fail to notice the importance of recognising the so-called ratio of D:N—i.e., ratio of dextrose to nitrogen in the diabetic animal.

At the end of each chapter is a bibliography setting forth the results of other workers in the same field—a field already well "turned over"—yet but partly "tilled." The author has added another furrow—a useful contribution—to a subject that for years to come will tax the best energies of our most acute investigators.

Medical Electricity. By H. LEWIS JONES, M.A., M.D. Cantab., Consulting Medical Officer to the Electrical Department in St. Bartholomew's Hospital, &c. Sixth edition. London: H. K. Lewis. 1913. Pp. 551. Price 12*s.* 6*d.* net.

IT is always a pleasure to review the successive editions of this well-known work on medical electricity. On previous occasions we have described the volume as the standard work on the subject by an English author, and the sixth edition fully maintains the position.

Since the last edition in 1906 some very important changes have taken place in our ideas regarding electro-therapeutics, and we find in reading this volume that while it has been but slightly enlarged as compared to previous editions, the text has been revised and even rewritten in places so as to bring it into harmony with accepted views. As the author points out, we were very uncertain as to the mode of action of electricity on the body only a few years ago, but now we are able to take our stand on a firmer foundation, "and may recognise that electrical applications act either by the chemical (ionic) effects which they produce or by their thermal effects. This attitude enables us to see more plainly what results may be reasonably expected from electrical treatment, and teaches us how to proceed so as to obtain the results desired." Medical electricity has, in fact, been undergoing very important developments during the last few years, and to an extent scarcely realised by those who are not intimately associated with the subject. It is now much more scientifically understood, and electrical applications are correspondingly more accurate and reliable. The day has gone past when a more or less intelligent manipulation of a few switches was considered a sufficient qualification for the practice of electro-therapeutics. The best results will be obtained only by those whose medical and scientific training has been on a liberal scale.

The general arrangement of the book remains the same as in the last edition. The initial chapters on first principles and apparatus have been brought up to date, and in the chapter on high-frequency currents we have the newer modification known as diathermy fully explained. The X rays are dealt with chiefly as regards their value as a therapeutic agent; the author rightly considers that their use in diagnosis has become too large a subject to be dealt with in the space available in this volume, but enough has been given to lead on beginners to special works on the subject. In the chapters devoted to physiology and general therapeutics we soon begin to realise how many developments have taken place during the last few years. The application of the ordinary forms of electricity is mainly a transference of ions or of heat production, and the results can in most cases be accounted for on this hypothesis either directly or indirectly. It will be seen from this that the field covered by electricity is a wide one—much wider than many people are inclined to believe. As the author here says, there still exists a widespread notion that electricity is useful only for the stimulation of paralysed limbs, and this belief has tended in the past to limit the scope of electro-therapeutics, and to interfere with its progress. A perusal of Chapters X. and XI. would do much to dispel many erroneous ideas that are still more or less widely prevalent. In Chapter XII. we have a very complete description of the use of condenser discharges in electrical testing;

indeed, the manner in which the electrical condenser has been brought into practical use constitutes a prominent feature of the progress made during the last few years. The great advantage of this method is that it gives a means of classifying the various degrees of muscular degeneration to an extent not possible with the more familiar coil and continuous currents.

It is unnecessary to give any further detailed description of a work that in its previous editions is so well known and deservedly popular as this. Great changes have come over the subject since the last edition was issued, and all who wish to keep thoroughly up to date in their knowledge should provide themselves with the new issue..

Lectures on Diseases of Children. By ROBERT HUTCHISON, M.D. Edin., F.R.C.P. Lond. Third edition. London: Edward Arnold. 1913. Pp. 404. Price 10*s.* 6*d.* net.

IN this new and amplified edition of Dr. Robert Hutchison's "Lectures on Diseases of Children" several new chapters are included, notably on the subjects of cœliac disease, hysteria, common urinary disorders, and morbus cordis.

The chapter on cœliac disease represents an attempt to resuscitate under its old and original title a series of symptoms which includes light-coloured pultaceous stools, a prominent abdomen, and a characteristic mental attitude of introspection and precocity. Whether the author has made out a good case for his claims is open to question. Nervous and precocious children at times develop catarrhal conditions of the bowel and symptoms of pancreatic insufficiency, and when this is the case the clinical picture is practically the same as that to which Dr. Gee first gave the name cœliac disease in 1888, a name which has now almost disappeared from the nomenclature of disease. In some respects it is regrettable that Dr. Hutchison has omitted to revise and bring up to date his chapters on the tuberculous and syphilitic affections of children. During the last few years ideas with respect to the prevalence of the former during the early years of life and the widespread influence of the latter in relationship to mental deficiency have materially altered; and although the author has not altogether omitted to call attention to these recent developments in pathology, his revising pen has been too conservatively employed. Again, in his chapter on infantile scurvy, although the pathology is still somewhat obscure, the inclusion of some reference to the recent work published on the vitamines would have been of considerable interest to many of his readers. The chapter on hysteria in children includes a number of very interesting cases, and should help to emphasise the important part which the psychoses of young children play in the mimicry of organic diseases.

This little collection of lectures affords opportunities for improving such leisure hours as the busy practitioner may enjoy. Each lecture is complete in itself and provides some 15 minutes' most instructive reading.

Spezielle Chirurgische Diagnostik. Für Studierende und Aerzte. Bearbeitet von Dr. F. DE QUERVAIN, O.O. Prof. der Chirurgie und Direktor der chirurgischen Universitätsklinik in Basel. Mit 510 Abbildungen im Text und 4 Tafeln. Vierte vervollständigte Auflage. Leipzig: F. C. W. Vogel. 1913. Pp. 790. Price, paper, 18 marks; bound, 20 marks.

THE appearance of a new edition of this work shows that its appreciation by the medical public still continues. It is, of course, impossible to teach by a book the diagnosis of surgical diseases and conditions, but a book may afford much assistance in the elucidation of difficult cases; by the provision of suitable illustrations the reader may be able to understand more clearly the peculiarities of the different lesions, and thus he will be put in a better position to distinguish one condition from another. We know of no work on diagnosis which will give greater help than this, for the descriptions of the essential points of diagnosis are so clearly stated and the illustrations are so typical that the student cannot fail to derive benefit from reading the volume. Colour is fairly widely used, where necessary, to make diagnostic differences clear, and the coloured plates showing the skin distribution of the nerve roots are especially valuable.

Lungenchirurgie. Von C. GARRÈ, Professor de Chirurgie an der Universität Bonn, und H. QUINCKE, em. Professor der inneren Medizin an der Universität Kiel. Zweite Auflage. Mit 114 zum Teil farbigen Abbildungen im Text und 2 farbigen Tafeln. Jena: Gustav Fischer. 1912. Pp. 250. Price, paper, 7.50 marks; bound, 8.50 marks.

Surgery of the Lung. By C. GARRÈ, Professor of Surgery at the University of Bonn, and H. QUINCKE, formerly Professor of Medicine at the University of Kiel. Second edition. With 114 coloured and other illustrations and 2 coloured plates. Translated from the German by DAVID M. BARCROFT, M.D. Edin. London: John Bale, Sons, and Danielsson. 1913. Pp. 271. Price 12*s.* 6*d.* net.

WHEN the first edition of this work appeared in 1903 it was at once recognised by surgeons throughout the world that the book was a valuable addition to the literature of a department of surgery which had not received the amount of attention by writers that its importance deserved. Since that time the surgery of the lungs has made great advances, and a second edition has been called for; and this want the authors have supplied. The great increase of the material has necessitated the rewriting of much of the book, and a comparison of this edition with its predecessor will demonstrate the great additions which have been made. In the employment of reduced pressure during operations on the lungs much progress has been made, and the latest forms are here described and also those forms of apparatus which depend on the use of an increased pressure within the patient's lungs. Professor Garrè tells us that he has performed the majority of his operations on the lungs without the use of any respiratory apparatus, but in the more serious operations he acknowledges the value of these new inventions. He thinks that it is difficult to decide which is best of them, for each form of apparatus has its advantages and its disadvantages.

A very full account is given of the making of an artificial pneumothorax, in the treatment of pulmonary tuberculosis, in those cases in which the disease is confined to one lung. The authors appear to have a high opinion of this method of treatment, an opinion which is hardly shared by physicians in this country in any number, though the procedure has received vigorous support in our columns. Nitrogen for the pneumothorax is recommended as being more slowly absorbed than air, and we are told that some 16 injections of the nitrogen are usually required, and that the average duration of the treatment may be stated as between a year and 18 months. A new chapter, and one of no small interest, is that dealing with the question of the surgical treatment of emphysema of the lungs—that is to say, the surgical treatment of the fixed dilated thorax. The operation that has been performed for this condition is the removal of several of the rib cartilages, and the authors speak very favourably of the results obtained.

This work has well deserved to be translated into English. In its original language it has had a wide circulation, and it is almost the only recent work devoted wholly to this subject. The present edition is a great improvement on the former issue and we feel sure that the English version by Dr. Barcroft will be appreciated. The translation is on the whole good, but here and there Dr. Barcroft has allowed the German phraseology to remain, although he has translated the words into English.

Birch's Management and Medical Treatment of Children in India. By C. R. M. GREEN, M.D. Durh., D.P.H. Cantab., F.R.C.S. Eng., Surgeon to Eden Hospital, Professor of Midwifery and Fellow of Calcutta University, Lieutenant-Colonel, I.M.S., and V. B. GREEN-ARMYTAGE, M.B. Bristol, M.R.C.S. Eng., Resident Surgeon, Eden Hospital, Captain I.M.S. Fifth edition. Calcutta: Thacker, Spink, and Co. London: W. Thacker and Co. 1913. Pp. 470. Rs. 7.8.

THE first edition of this book, published in 1879, by Brigade-Surgeon Edward Birch, I.M.S., was in effect an entirely rewritten seventh edition of a book by Surgeon H. H. Goodeve, of the Bengal Medical Service, the first edition of which was published in 1844, so that the present work has a practical continuity of eleven editions extending over nearly 70 years. If this is not enough to commend it we may refer to our unhesitating commendation of the preceding edition, the last edited by Dr. Birch himself, which was reviewed in THE LANCET of April 4th, 1903. Dr. Birch died at the end of 1912, and the present edition has been prepared by Lieutenant-Colonel Green and Captain Green-Armytage.

While thoroughly revising the last edition and in part rewriting it to bring it up to date, care has been taken to preserve the idea of the original author of the book—viz., the giving of trustworthy instruction as to the rearing of children and the dealing with emergencies incidental to child life in India, in places and under circumstances where the advice of a medical man cannot be obtained. General hygiene, the prevention of disease, and diet—especially artificial feeding—have been more extensively dealt with, the sections on fevers and bowel diseases brought into line with modern knowledge, and kala-azar and Mediterranean fever have received attention, while useful information as to poisonous snakes and the treatment of snake-bite is also given. The division into four sections, dealing respectively with the child in health, the nature, spread, prevention, and detection of illness, the child in sickness, and the use of remedies in children, is retained. The book contains much more detailed information on many medical points than would be fitting for a home manual of domestic medicine, but many Europeans in India and other Oriental countries live entirely beyond the reach of medical aid, and the book is so clearly written as to be comprehensible by lay adults of average intelligence.

Die Malaria nach den neuesten Forschungen. By Professor ANGELO CELLI, Director of the Hygienic Institute of the University of Rome. Second German edition. With 4 coloured plates and 121 illustrations in the text. Berlin and Vienna: Urban and Schwarzenberg. 1913. Pp. 289. Price, paper, 16 marks; bound, 18 marks.

THE first German edition of Celli's important work on malaria was published in 1900. Since then our advances in the knowledge of this disease, its treatment and prevention, have been so great that a second German edition became absolutely necessary. The valuable material collected by Professor Celli, together with the rich experiences gained during recent years in Italy, were to a large extent inaccessible to many medical readers so long as they remained in the Italian language, with which comparatively few European men of science are acquainted. Therefore, the work has been translated into German and the same publishers who prepared the first German edition have undertaken the second, Signora Anna Fraentzel Celli making the necessary translation of the text from the fourth Italian edition.

The book is divided into three parts, dealing respectively with the etiology, the epidemiology, and the prophylaxis of malaria. A full description is given of malarial parasites, the methods of examining the blood of persons infected by the disease, as well as of other diagnostic methods. The various kinds of mosquitoes are also described, with special consideration of those concerned in the transmission of the malarial parasites. The history of epidemics of malaria from an early period up to the present day is given, with an interesting account of the manifestations of the malady in Italy. Appended are tables of mortality from the disease in affected Italian provinces from 1887 to 1910, showing how the number of deaths from malaria has fallen from 21,003 in 1887 to 3619 in 1910. After the geographical distribution of the malady throughout the world has been considered, the incidence upon the various provinces in Italy is dealt with, illustrated by a number of maps shaded to represent graphically the amount of the disease occurring in each. The circumstances associated with occurrences of malaria, the carriers of the infection, the causes of predisposition and of immunity are severally discussed.

Considerable attention is given to the value of quinine as a prophylactic, Professor Celli's opinion being that it is the simplest and the surest of all methods for attaining the desired end. Only by the help of the systematic use of quinine, he thinks, can Italy be freed from malarial infection, which is the cause of untold injury to the health and prosperity of the nation. At the same time, he does not ignore other methods of prevention, for he says that after a long study of the disease he can only repeat the same advice he gave some years ago when suggesting a complete plan for antimalarial prophylaxis—namely, not to pin our faith entirely to one exclusive theory, but to give due consideration to differing local circumstances, using quinine in conjunction with other methods of prevention: "Unum facere, et alterum non omittere." A long bibliographical list is appended, giving references from the earliest times up to 1911.

Sclero-corneal Trephining in the Operative Treatment of Glaucoma. By ROBERT HENRY ELLIOT, M.D., B.S. Lond., D.Sc. Edin., F.R.C.S. Eng., Lieutenant-Colonel, I.M.S., Superintendent of the Government Ophthalmic Hospital, Madras. London: The Ophthalmoscope Press. Pp. 117. Price 7*s.* 6*d.* net.

IN the history of every subject there are landmarks. In the history of ophthalmology there is a landmark which will ever be its greatest, the middle of the nineteenth century, the age of von Graefe, Helmholtz, and Donders. To that age belongs the discovery by von Graefe of iridectomy as a cure for glaucoma. Time has shown that this great discovery has its limitations. Whilst iridectomy is truly and wonderfully a cure for acute glaucoma, it fails or is inadequate as a cure for the chronic forms of the disease. The early twentieth century will, unless we are much mistaken, be a landmark in the history of the treatment of chronic glaucoma. Let us hope that it will signalise another conquest over disease.

The failure of iridectomy in chronic glaucoma seems to have dawned only gradually upon the minds of ophthalmologists, partly because of the extreme chronicity of the disease, partly, perhaps, because of the enormous influence of its success in acute glaucoma and the authority attaching to the reputation of its great discoverer. Of recent years there has been a great awakening, as is best shown by the manner in which new methods have been greeted and applied. The history of the early attempts of Herbert, Heine, Lagrange, and others is well known. They have been tried and found wanting. Latest of all comes the revival of an old method—trephining of the eyeball. It was introduced for the treatment of glaucoma by Argyll Robertson in 1876, as is recorded in the Royal London Ophthalmic Hospital Reports for that year. But, as advocated now by Elliot and others, it is to all intents and purposes a new method, for Argyll

Robertson trephined over the ciliary body, near its junction with the choroid, whereas Elliot trephines as far forward as possible, half in the cornea and half in the sclerotic. It is too early yet to cry "Eureka," but in our opinion trephining as carried out and advocated by Colonel Elliot offers the best hope of success in combating chronic glaucoma. We therefore hail his monograph on the subject with great pleasure, the more that we find it thoroughly practical and to the point. There are few ophthalmic surgeons who are really qualified to criticise Colonel Elliot's procedures and recommendations except on general surgical grounds, and on these we have no criticism to offer. But many surgeons have now performed the operation many times, and have been struck not so much with points to criticise as with experiences which they find confirmed by the author. Thus the prevalence of iritis after the operation has been quite noticeable, so that atropine has been used as a routine at an early stage. Colonel Elliot has had a similar experience, and advocates the same line of treatment.

The book contains an historical chapter by Mr. Sydney Stephenson and Mr. Ballantyne, and a paper on the site of trephining by Mr. Temple Smith, and is one which every ophthalmologist ought to read.

Travaux sur la Nouvelle Bacteriologie de la Tuberculose dans ses Rapports avec l'Hygiène et la Thérapeutique Spécifiques de cette Maladie. Par J. FERRÁN. Barcelone: Imprimerie "La Renaixensa." Pp. 174.

THIS work contains three addresses delivered at various Congresses on Tuberculosis, a paper on antitubercle vaccine, and two extracts from the *Comptes Rendus* of the Société de Biologie. Dr. Ferrán has always been bold in speculation and experiment, and this quality is not lacking in the collection of papers under consideration.

The first address is directed mainly against the idea that the protection of a community against disease can be secured by the minor measures of hygiene such as isolation and disinfection. The author considers that "*la grande hygiène*" is directed to secure specific immunity and that this can be obtained only by the artificial or natural action of the specific bacillus or its toxic products; the minor measures, even if successful, would merely create a population of great susceptibility which would fall a victim to the partially vanquished bacillus or to some saprophyte which would take on pathogenic action in a field thus cleared of competitors. The main thesis defended, however, is that the ordinary acid-fast tubercle bacillus represents the fine flower of a race of bacilli capable of producing some stage of the complex disease, tuberculosis; that this form produces a chronic disease, and that this is tantamount to saying that this acid-fast bacillus and the body infected have become fully adapted and armed one against the other; and that consequently it is useless to look to this form of the organism for protective material. There is, however, according to Dr. Ferrán, a pretuberculous stage characterised by simple inflammation and not by tubercle formation, which is associated with the presence of a non-acid-fast organism. This bacillus α differs widely from the usual Koch's bacillus in being motile, easily cultivated, and causing turbidity in broth. It is, however, capable of giving rise to bacillus β, still non-acid-fast, though producing lipoid toxins, and this finally develops into bacillus γ, the acid-fast tubercle bacillus. This is itself capable of retrogression into bacillus δ, in which the characters of α begin to reappear. Dr. Ferrán's argument is that, while admitting the tubercle-producing properties of Koch's bacillus, this acid-fast form is not that which produces infection in man or animals under normal conditions, but rather the variety α, capable of living as a saprophyte, and that it is to this bacillus that we should look for protective substances; it is this variety which furnishes the author's vaccine. The variety α is possibly, according to Dr. Ferrán, an intestinal microbe, and the method by which it and its successors are obtained appears to be prolonged culture in broth media and frequent or serial inoculations in animals.

It is obvious that the original and heterodox views of the author can be accepted only when proved by sound work and very carefully controlled experiments. The methods by which the varieties of the tubercle bacillus are obtained are naturally suspect to the bacteriologist owing to the great danger of error to which they are exposed. The author is aware of this danger, and asserts that he has guarded against it, but possibly owing to the fact that these papers are written for delivery to an audience there is much more assertion and argument than proof. The collection of articles, however, is of considerable interest, and certainly stimulates the questioning spirit with regard to the orthodox view.

Abel's Laboratory Handbook of Bacteriology (Oxford Medical Publications). Second English edition, translated from the fifteenth German edition by M. H. GORDON, M.D., B.Sc. Oxon., Assistant Pathologist to St. Bartholomew's Hospital, &c., with additions by Dr. A. C. HOUSTON, Dr. T. J. HORDER, and the TRANSLATOR. London: Henry Frowde and Hodder and Stoughton. Pp. 251. Price 5*s.* net.

THIS little book claims to be a guide to laboratory work and to "collect in practical form those technical details which so easily slip the memory." It deals with all kinds of laboratory procedure—with practical microscopy, nutrient media, staining and cultural methods, the preparation of material, the bacteriological examination of air, water, fæces, sputum, and so forth, as well as with special examination of the blood for the various bodies connected with immunity. It constitutes a very compact and at the same time complete and accurate manual, for which we have nothing but praise. It should find a place in every bacteriological laboratory.

MISCELLANEOUS VOLUMES.

IN the following article we deal briefly with a number of chemical text-books and monographs which have recently reached us.

A second edition of *The Chemical Constitution of the Proteins*, by R. H. A. PLIMMER, D.Sc. (London: Longmans, Green and Co. 1913. Pp. 107. Price 3*s.* 6*d.*), has been issued, forming one of the admirable series of monographs on bio-chemistry, edited jointly by the author and Dr. F. G. Hopkins. From the continuous work in the chemistry of the proteins there arises a need for registering results from time to time. Though no startling discovery has been announced since the last edition was issued three years ago, there have been steady and valuable additions made to our knowledge of the behaviour, constitution, and analysis of the proteins which are faithfully recorded in the present monograph.——*An Introduction to the Rarer Elements*, by PHILIP E. BROWNING, Ph.D. (Third edition. London: Chapman and Hall; New York: John Wiley and Sons. 1912. Pp. 232. Price 6*s.* 6*d.* net), sums up very well the position which the rarer elements are taking in the general scheme of chemistry. In so many text-books the references to these elements are very bald. Professor Browning's more expansive treatment of the subject is welcome.——*The Qualitative Analysis of Medicinal Preparations*, by H. C. FULLER, B.S. (Chapman and Hall. 1912. Pp. 132. Price 6*s.* 6*d.* net), gathers together the principal rules for guidance in the analytical

examination of drugs. The author's classifications are distinctly ingenious and helpful, and the series of qualitative tests given certainly include a considerable amount of material carefully collected from a very widespread literature on the subject. The directions all through are practical, and the tests given appear to have received confirmation in the author's laboratory.——In *Evans's Analytical Notes for 1912*, published by Messrs. Evans, Sons, Lescher, and Webb, Liverpool, we have the results of an analytical control over the drugs supplied to this firm. Some 10,000 samples have thus passed through the firm's laboratories during the year. The firm may be commended for keeping such an obviously watchful eye over the commodities supplied to them, and the free publication of their findings must be a very valuable guide to others, and should meet with wide appreciation.——In his *Notes on Chemical Research* (London: J. and A. Churchill. 1913. Pp. 68. Price 2*s.* net) Mr. W. P. DREAPER, F.I.C., F.C.S., makes plain what should be the qualifications of a student contemplating research work. We think the publication of these essays is timely, and his suggestive volume should be of considerable value to probationers. There are many problems of industrial importance awaiting solution which if only they were brought to the notice of the competent man would culminate in real technical progress being made and the stimulation of more applied research than is the case at present.——At first sight *The Petrology of the Sedimentary Rocks*, by F. H. HATCH, Ph.D., and R. H. RASTALL, M.A. (London: George Allen and Company, Limited. 1913. Pp. 425. Price 7*s.* 6*d.* net), would not appear to relate to medical subjects, but to some extent it does so, since the author explains the presence of certain minerals in waters which are employed in therapeutics. Chalybeate waters and bitter purgative sulphate waters are cases in point. Besides, the book refers to the occurrence of minerals which are the source of some of the preparations in materia medica. The interest of the work, however, is chiefly for the petrologist, though it should reach a far wider circle of readers, in view of the informing material and of the simple terms in which the descriptive matter is presented.——A very good introduction to organic chemistry is given in the second edition of *Organic Chemistry*, by HOWARD D. HASKINS, A.B., M.D. (London: Chapman and Hall; New York: John Wiley and Sons. 1913. Pp. 430. Price 8*s.* 6*d.* net). The book is intended for medical, pharmaceutical, and biological students, whose requirements appear to have been carefully regarded. The chapters on colloids, osmotic pressure, and ionisation are particularly useful and clearly written. The experimental sections fit in instructively with theoretical considerations. The introduction of symbols for the sake of brevity is here and there confusing, in spite of the use of italic capitals to indicate that the letter is not a chemical symbol. We quote an example: "Filter and divide the filtrate into portions *A*, *B*, *C*, and *D*. To *A* add NaOH ..... the appearance of a greenish-blue colour or a precipitate of Prussian blue indicates N. To *B* add a few drops of a *fresh* solution of sodium nitro-prusside; a reddish-violet colour points to the presence of S. To *C* add lead acetate ..... a brownish-black discolouration or precipitate is due to S." The reader can hardly avoid being muddled.——*Steam Economy in the Sugar Factory*, by KARL ABRAHAM, translated from the German edition by E. J. BAYLE (London: Chapman and Hall. 1912. Pp. 104. Price 6*s.* 6*d.* net), calls for little comment from us, since it is purely an engineering guide. The economies suggested are of importance as perhaps determining the price of the product, the cheapness and purity of which are clearly related to popular needs and resources.——*A Treatise on the Mineral Waters of Vichy*, by CHARLES COTAR, M.D. Paris (London: H. K. Lewis. 1913. Pp. 206. Price 4*s.* 6*d.* net), presents as full an account as we remember to have seen of the cases benefited by treatment with Vichy water. Dr. Cotar supplies a temperate account of the value of the waters in disease, and is just as emphatic about the contraindications as he is about the indications of the cure. The book should therefore prove a valuable guide to the physician in the choice of a course of waters for his patient.——*The Story of a Loaf of Bread*, by T. B. WOOD, M.A. (Cambridge University Press. 1913. Pp. 140. Price 1*s.* net), covers a wider ground than the title would imply, for no inconsiderable portion of the book is devoted to the growing and marketing of wheat, and to an account of the investigations which are in progress with the object of improving wheat from the point of view of both the farmer and miller. The author is not favourably inclined towards the standard bread movement, but refers to the probability of the germ containing some unknown constituent possessing a peculiar effect on nutrition. The "story" is well developed.——Belonging to the same series (the Cambridge Manuals of Science and Literature) is *The Atmosphere*, by A. J. BERRY, M.A. (1913. Pp. 146. Price 1*s.* net), which presents an account of the properties of the constituents of the atmosphere with a history of their discovery. The subject, as is well known, has been considerably expanded during recent years, and the author has included some interesting chapters on liquid air, argon, neon, helium, and the radioactivity of the atmosphere. The researches of Dewar, Ramsay, Lord Rayleigh, and others are neatly epitomised. Altogether, the book is an excellent narrative of modern views as to the composition of the atmosphere and as to the changes which it is likely to undergo in the future.

New Inventions.

ALL-GLASS ASEPTIC TUBERCULIN SYRINGE.

THIS new all-glass syringe presents the following points of practical advantage:—1. The barrel and piston are elongated to about double the length of the ordinary all-glass hypodermic syringe. 2. The barrel is clearly engraved with numbered gradations of 1 to 10, and between them the half gradation, each indicating one-twentieth of 1 c.c., are marked (see illustration), thus enabling the operator to give the dose desired with great exactness. 3. The piston as well as the nozzle is of deep blue coloured glass, the position of the piston can be readily perceived at any moment, and it fits the barrel accurately down to its base so that the measured dose is injected without difficulty. 4. Owing to the clearness with which even a twentieth part of 1 c.c. can be seen, dilutions can be made very conveniently in the syringe itself, the requisite quantity of standard physiological saline solution being drawn up into the syringe after the tuberculin. 5. The various parts of the syringe can be separated very readily and sterilised by boiling.

The syringe has recently been introduced by Messrs. Burroughs Wellcome and Co., 23, Snow Hill Buildings, London, E.C.

MEDICO-LEGAL SOCIETY.—The annual dinner of this society will take place on Monday next, June 23rd, at the Holborn Restaurant, London, W.C., at 7.15 for 7.30 P.M.

THE LANCET.

LONDON: SATURDAY, JUNE 21, 1913.

The Higher Education of the Surgeon.

UNTIL comparatively recent times the surgeons of one country knew very little of the work, experiences, expedients, and progress of their colleagues in distant climes, and, in fact, even in contiguous states great improvements might be effected in the surgical procedures, and yet no knowledge of what was being done would cross the frontiers for many months. In the early years after the Renaissance it was customary for every surgeon or physician who wished to gain extended knowledge of his art to travel abroad to the great centres of learning, there to acquire principles and methods which were unknown at home. Later, and as the opportunities for instruction in this country increased, the custom of visiting foreign lands, at any rate for the purpose of surgical study, became less frequent. It is probable that it was at its lowest point during the latter years of the eighteenth century and the early years of the nineteenth century, though even then a course of study in Paris was very often taken out by the more ambitious men. But the long Napoleonic wars made intercourse difficult, and when these had ceased some years elapsed before it again became the custom for many surgeons to visit foreign centres of surgical activity. The advent of the medical press acted in two ways. THE LANCET was the first weekly medical paper, and by correspondence from abroad stimulated the desire to visit foreign centres. On the other hand, some surgeons felt that as they were able to obtain foreign news by reading the various medical journals, a number of which began to appear in monthly form, the absolute necessity for foreign travel was removed. With the facilities following the introduction of railways some increase of travel took place for the purposes of surgery, but the surgeons of this country are, as a whole, not so much in the habit of visiting foreign centres of surgery as are the surgeons of some other countries, especially the surgeons of Canada and the United States. It seems to be not at all uncommon for a surgeon from the other side of the Atlantic to take a three months' holiday, or perhaps even a six months' holiday, and to spend it in visiting and investigating foreign clinics and operating theatres. Such visits must do good; they enlarge the extent of the knowledge of a surgeon, and make him better acquainted with the methods employed by others, and, by the opportunities afforded for mutual comprehension, they advance the cause of medical reform.

For there have been many energetic discussions in the surgical world, and at times many violent words have been spoken, when even a slight personal knowledge of one another's work would have tended to mitigate the violence of the disputes. In this country the intercourse between surgeons belonging to different cities has been really very limited. It is true that many provincial surgeons have been educated in London, and a few provincial surgeons have come to practise in London, but for the most part the intercourse is small between the capital and the provinces, or between the different divisions of the kingdom. When LISTER introduced his magnificent discoveries to the world they penetrated very slowly to London. It is well known that all his findings were not at once accepted in London, but the objections raised against them were for the most part theoretical, and a large proportion of them would have disappeared almost at once could the methods have been seen in practical use and the wonderful results have been observed. His early papers were mostly published in our columns and were extremely clearly written; but they were brief, and his doctrines were so revolutionary that more was required. Yet apparently few men went from London to see the work being done and to sift the evidence on the spot. This was certainly a case where surgery lost by the stay-at-home habits of British surgeons. On June 10th last the Surgical Section of the Royal Society of Medicine tried a new experiment designed to help the higher education of the surgeon by promoting intercourse among the leaders for the purpose of comparing local experiences. A good many provincial surgeons are members of the Surgical Section, but their visits to the meetings are necessarily rare, so it was resolved that a meeting should be held in some important provincial centre. An invitation was received from Birmingham, and a very successful day was spent by those surgeons who were able to spare the time to visit Birmingham. They had the privilege of seeing the performance of operations by members of the staff of the two chief hospitals—namely, the General Hospital and the Queen's Hospital; they were shown many interesting cases, and an ordinary meeting of the section was held, at which interesting papers were read. We publish an account of the meeting elsewhere.

It is to be hoped that this excellent idea will not be allowed to drop and that many other provincial meetings may be held, as well as meetings at the different London centres. For even in London the surgeons attached to one hospital know comparatively little of what is done in other institutions, and though they meet at the Royal Society of Medicine they have little personal knowledge of the work of others. It was the recognition of this want that led to the establishment of the "surgical clubs" to which we referred a few weeks ago. Each of the clubs has held several meetings, and it is already felt that good has resulted from it. It stands to reason that by observing the methods of others of his craft the surgeon is enabled to learn much that never finds its way into books, for there are many niceties of technique which can only be imitated by seeing personally how they are carried out. It is a fairly obvious thing to say that the more surgeons know of one another's work the more they will learn, and we say it here only because the British attitude does not support the truism.

Social Progress.

BY the records of the various civilisations it will be seen that men's minds throughout them all have turned with longing to a former period called the Golden Age, in which sorrow and suffering were unknown, when there were true charity and brotherly love on earth, and when universal peace reigned. The evidence of the existence of this period is, of course, never produced. The wistful looks into the past have had their origin in dissatisfaction with the present. Because at all dates and under all climes the shortcomings of the world have been obvious to those who have enough knowledge to make a survey, however summary, and because the innovations of society do not always provide the remedies, the frequent impression has been produced that there was once a period when none of these shortcomings existed, and, indeed, that they are all the offspring of innovations. Many men have felt that at some date or other this Golden Age was to return, and, pending this happy consummation, great thinkers have set their intellects to devising ideal conditions, such as those foreshadowed in PLATO'S "Republic" and MORE'S "Utopia," where justice and happiness should reign. We are now too well-informed to regard these and numerous less known works with similar aims as more than exercises in imagination, ranging, though they may, from the highest philosophy down to considerable silliness; but it is quite clear that the conditions imagined are far from realisation and that our progress in modern times has not been the direct going forward which optimists have anticipated. If expectation of life has increased and epidemics are fewer, if we are slowly advancing in our knowledge of the processes of disease and so of its prevention, yet there is much grinding and sordid poverty, much horribly monotonous toil for workers and much class bitterness. Possibly in Imperial Rome all these things were worse than they are with us, but it is a lukewarm compliment to this century to say that its evils are no grosser than the evils of the pre-Christian and earliest Christian eras.

Dr. JAMES WALSH,[1] in his vigorous books on "Education and Modern Progress," frankly finds that that which is good in modern life is mainly a legacy from, or a return to, the position of our forefathers. The attitude is picturesque but indefensible in the main, in spite of the easy way in which support can be found for it. Brotherhood is a phrase which is now much to the fore and insistence is laid upon the duties of the rich to the poor, upon minimising the differences between class and class, upon a poor man's son having an equal chance with the son of a rich man, in so far as regards education.. It is perfectly true that centuries ago these things were realised. The essence of the old feudal system was that from the king, who owed allegiance to GOD, an ever-lengthening chain of links descended, each of which owed allegiance to an overlord, but also owed duties to vassals. That in process of time everyone found it convenient not only to forget his duties to his lord but also those due to his vassals was not necessarily the fault of the system as a system; either natural human weakness was to blame or the scheme was found no longer to meet the real needs of the community for whom it was devised originally. But systems which have these obvious weaknesses do not last. Looking at our own country only, great kings like EDWARD I., rapacious reformers like HENRY VIII., law-givers, saints, and spoliators cross the stage, and the old order changes, giving place to new, but not necessarily losing the instinct or spirit of the old. This is the thing which Dr. JAMES WALSH has missed. He sees the good in the old, and he sees the modern employment of part of it; but he forgets that we to-day, while rejecting safeguards which are no longer required, have created in their place much that is valuable and even splendid, and that the spirit of fraternity inspiring social workers has been always the same throughout the ages. Dr. JAMES WALSH would have us believe that human progress moves in circles, and as ARISTOTLE remarked in the treatise ascribed to him called Mechanica, "A circle moves in two contrary directions at the same time." The view is untenable. It is true that a study of history from original sources and documents will show the impartial observer that in many instances the man of to-day may say with the prophet ELIJAH, "I am not better than my fathers," but in many directions are the signs of a general rise in ideals, conceptions and amenities too obvious to make it possible to assert that there has been no progress.

Dr. WALSH is known to our readers as an enthusiastic and learned writer upon medical historical subjects. His enthusiasm influences him. True, no one man ever wrote history worth reading without a certain amount of bias. Dr. JOHNSON, when praised for the impartiality of his Parliamentary digest, said: "That is not quite true; I saved appearances tolerably well, but I took care that the Whig dogs should not have the best of it," and we can see the political writers of the present time doing exactly the same thing, whether Tory or Whig is in question. When Dr. WALSH compares Spanish and British doings in the New World, greatly to the disadvantage of the latter, he finds it convenient to forget the cruelties of the conquest of Mexico and Peru. In maintaining his views he goes back to original documents, for he quotes largely in his first volume from the book of instruction to a son, composed by an Egyptian vizier named PTAH HOTEP about B.C. 3500. He shows incontrovertibly that many so-called novelties in medicine and surgery as well as in education and sociology are quite old. He proves that gold work in dentistry was known to the Etruscans, that there was commercial cheating in ancient times just as there now is, and he concludes that the trade guild looked after its members far better than does any institution extant to-day. But in his zeal for the past he omits much which can be said for modern times. In many ways we of the great civilised nations are much better than our fathers. We are not so cruel, our criminal laws are infinitely less savage than they were 100 years ago, we are cleaner in body and less drunken. Poverty and distress have not decreased as they should have done, considering the wealth of thought expended upon the solution of the political problems upon which they depend. Yet on the whole man's lot is easier and life is more full and promising, and less that of the animal of burden. We think it is the province of a medical

[1] Education, How Old the New; and, Modern Progress and History, by James J. Walsh, M.D., &c. New York: Fordham University Press. 1910 and 1912. Pp. 458 and 436 respectively. Price $2 net each.

journal to enter a protest against the eternal pessimistic cry that there is no progress, for the sort of fatalistic melancholy that the reiteration of this gloomy view causes is distinctly inimical to health.

Continuation Schools.

IN a recent article in THE LANCET, when referring to the admirable efforts now being made to improve the physical health of the children of the nation, we took occasion to express the hope that the good results achieved by this wise policy would not be wasted through any further delay in organising the training of the young during the formative years that follow the completion of school life. The urgency and importance of the problem touched on suffice to explain our recurring to it so soon, and there is, moreover, an added reason for its discussion at the present moment in the fact that, as all the indications go to show, we are on the eve of pregnant and far-reaching reforms in our educational system, and amongst these reforms the establishment of continuation schools will undoubtedly hold a prominent place. It is, therefore, very desirable, while the schemes to this end are still in the unfinished and alterable stage, that the questions involved should be carefully thought over by such sections of informed opinion as are competent to pronounce from various points of view on the proper aims and methods of adolescent training.

In this preparatory task the coöperation of the medical profession should be peculiarly valuable, inasmuch as the problem to be solved is one in which many of the fundamental factors, and these not the least important, belong to the category of the biological, and are more likely, therefore, to find adequate appreciation in minds trained to regard matters from their biological aspect. It may perhaps be well to emphasise this point, because in the discussion of these questions there has appeared to be some tendency to take a very narrow and illogical view of the rôle of medicine in relation to the education of the young. Even now, when it has come to be more or less explicitly recognised that the functions of the school medical officer are not restricted to the discovery and treatment of the *faits accomplis* of disease, it is as yet very inadequately understood that his concern with the health of the children includes the mind as well as the body, and further that it ought to extend beyond the period which administrative regulations may fix as the close of school life. And, of course, this prejudice is not confined to the scholastic world; it is still, even to persons of the educated classes, a somewhat unfamiliar idea that the physiological crises of adolescence are as much within the province of medicine as are the disorders of infancy; and many a parent who would never dream of foregoing medical aid when his child is suffering from infantile convulsions will deem himself perfectly competent, with the help of the schoolmaster, to treat the same child in later years when suffering the storm and stress of a morbid puberty. This failure to grasp the biological significance of the transition from childhood to adolescence has contributed very largely to the passive attitude adopted until recently in face of the problem of the boy worker. It has led to a sort of general acquiescence in the view that at 14 years of age a youth is fit to start independent life, and that he may be expected to show such stability of character and such maturity of intelligence as to be able to dispense with any further training in habits of thought and habits of conduct than he will naturally acquire in the economic struggle for existence. We know what the result has been; liberated from discipline at the very moment when the habit of continuity of effort is at once most essential and most dependent for its formation on outside control, the boy, brought up to no trade, finding himself first in one and then in another blind-alley calling, develops, through no fault of his own, a moral shiftlessness which unfits him to take advantage of a real opening if such should come his way; at best he drifts into the ranks of casual labour, at the worst he evolves into the habitual criminal or the incorrigible vagrant. In this manner society directs too many of the average youth into the career of the defective and the degenerate; it, in some sort, manufactures degenerates, and it does this, of course, the more easily and the more perfectly when it has some degree of native inferiority of organisation to work on.

It is, then, at this stage of early adolescence, when defects and irregularities in the nervous and mental constitution most clearly reveal themselves, and when deviations from the normal are so readily induced, that medical supervision and treatment should be able to exercise effectual influence; and if its importance is recognised as it should be in the continuation schools, which must soon form a part of our educational system, it is likely that medical control will in the future do no less for society in correcting disorders of adolescent development than it has done and is doing in the cure of adenoids or the prevention of carious teeth. Nor is this the limit of medical activity in the new field which the coming educational reforms should open to us. Continuation schools, though we may hope that they will not lose sight of the broader aims of culture, will of necessity be directed very largely to technical training, and to technical training of a specialised character. But it is obvious that the efficiency and value of that training will be immensely enhanced if its application is adapted to the varying capacities of the pupils, or, in other words, if specialisation is regulated in accordance with individual aptitudes. We have already, of course, a beginning of this in the testing of visual acuity and of colour sense in certain occupations, and, as Professor HUGO MÜNSTERBURG has pointed out in his latest contribution to psychological literature,[1] the same principle is susceptible of wide and profitable application over the whole field of industrial life. We may reasonably anticipate that in the continuation schools of the future the detailed study of individual aptitudes and deficiencies in relation to the demands of the various industrial callings will become a matter of routine work; and in this way, no less than through the prophylaxis of nervous and mental disorder, the recognition of the bearing of biological science on educational practice will be fruitful of good alike to the individual and to the community.

[1] Psychology and Industrial Efficiency. London: Constable. 1913.

Annotations.

"Ne quid nimis."

RESEARCH IN MENTAL DISEASE.

A CONFERENCE was held this year in London with the object of inducing the Government to institute grants in aid of research in mental diseases, just as grants are now being made to local authorities in aid of their public health departments. Alderman Morgan Thomas, Lord Mayor of Cardiff, was responsible for the summoning of the conference, and when the Home Secretary paid a visit recently to Cardiff the Lord Mayor, in his character of chairman of the Mental Hospital, prevailed upon Mr. McKenna to inspect that institution. In the new pathological research laboratory Dr. E. Goodall, the medical superintendent, took the opportunity of pointing out the present status of our knowledge of mental diseases and the absolute necessity, if progress is to be made, of a new departure in research methods. He explained that, with the exception of general paralysis, there are no macroscopical evidences of brain changes in mental diseases, and that even the microscope had so far failed to reveal any characteristic appearances, so that mental disease had come to be viewed more and more from the standpoint of general pathology. Inasmuch as the problem was now recognised as being mainly of a biochemical nature, the services of the general pathologist, the bacteriologist, the physiologist, and the chemist were needed for its solution. It was therefore urgent that proper laboratory facilities should be furnished for these workers, as well as for the ordinary clinical pathologist, so that their work might be correlated with a view to each throwing light on the difficulties of the other. The scheme outlined by Dr. Goodall, as representing the needs of the Cardiff Mental Hospital, is in the main that which is required in all mental hospitals in relation with a medical school—viz., the appointment of the requisite research workers and proper laboratory facilities therefor, with adequate funds for books and works of reference, the whole department being placed under a director who should be an expert in experimental medicine and devote his whole time to the work. The grounds for State aid in mental research work were thus very fully placed before the Home Secretary under the most effective conditions for their proper apprehension. It is satisfactory to note that in a subsequent speech Mr. McKenna said that what he had seen at the Cardiff Mental Hospital had been a revelation to him. While he was naturally guarded in promising anything, for the last word in all matters of finance is with the Treasury, he assured his hearers that he would express to the Chancellor of the Exchequer, in the most cordial terms of which he was capable, his appreciation of the admirable work being done at Cardiff and of the real necessity for the extension of that work, not merely at Cardiff, but at other great centres, like London, the West Riding of Yorkshire, and Lancashire, where similar attempts were being made to obtain a far larger proportion of cures. It is earnestly to be hoped that these excellent resolutions will come to full fruition, to the great benefit of the community and of the mentally diseased.

A PATHETIC DIARY.

Dr. S. Ingleby Oddie held an inquest at Westminster recently on the body of Dr. G. H. Dabbs, who died in painful circumstances at his flat at Iddesleigh Mansions, Westminster. The deceased suffered from angina pectoris, and the jury brought in a verdict of "Death by misadventure," acting upon the evidence of Dr. R. S. Trevor, who, after holding a post-mortem examination, deposed that in his opinion the inhalation of chloroform had accelerated the end. A feature in the case was a diary of his sufferings and of the occurrences of the last hours of his life kept by the deceased, who apparently treated himself without having recourse to the attendance of any medical colleague. He had almost to the last visited an aged friend, and "I won't funk" was one of the entries in a series of notes, which also contained the record, "I do so want to live. The world is so full of life and interest." The same notes recorded persistence in the use of chloroform and the avoidance of morphia, and a bottle which had contained chloroform was found beside the deceased where he lay on his bed dead, with a silk handkerchief over his face. A bottle which had contained morphia and a broken hypodermic syringe were also present.

THE JUBILEE OF THE BRITISH PHARMACEUTICAL CONFERENCE.

THE celebration of the jubilee of the British Pharmaceutical Conference which takes place next month is an event which should be of considerable interest to medical practitioners, for medicine is indebted to the Conference for many of the improved processes of manufacture of galenical preparations and for methods of estimating the value of drugs which have resulted in the production of stable and uniform medicinal compounds. As recorded in THE LANCET [1] at the time, the opportunity afforded by the presence of the British Association at Newcastle-on-Tyne in September, 1863, was embraced by "several influential chemists and druggists" for holding a conference. This was the humble beginning of an association which has stood for the best in pharmacy since that time, and has contributed largely to its scientific advancement. The main object the founders had in view was the cultivation of pharmaceutical science, a subsidiary object being the encouragement of social intercourse between men with the same professional interests. In order to effect the latter purpose it was determined from the beginning to hold the annual meetings in different centres, and during the 50 years the Conference has existed most of the important towns in the country have been visited. It is, however, in achieving its primary object that the Conference has been brought into close contact with the profession of medicine. To say that over 1000 original papers have been read at the meetings may mean much or little—it may merely show that the workers have been laborious; generally speaking, however, the papers represent good solid work, and if few of them have been epoch-marking, the whole makes an extremely valuable and business-like collection. Only pharmacists can form a true judgment of the value of the bulk of the work accomplished, for it is mainly concerned with purely pharmaceutical processes. To the medical practitioner the Conference is perhaps best known through the "Formulary," which was first published 26 years ago, and has since been acquired by the Pharmaceutical Society. The object of compiling the "Formulary" was to secure greater uniformity in composition and strength in non-official remedies and to enable the medical profession to prescribe them with definite knowledge of their qualities and without indicating any particular makes. It was hoped that a collection of formulæ of this kind would gradually relieve medical men and pharmacists from some of the incubus caused by the use of remedies of secret composition. It is hardly possible to say to what extent this hope has been realised, but it is probable that the success of proprietary brands of preparations would have been still greater than it has been if the "Formulary" had never been published. The remedies of the British Pharmacopœia are admittedly only a portion of those

[1] THE LANCET, Sept. 26th, 1863, p. 377.

commonly prescribed, and by furnishing formulæ for extra preparations of uniform strength the British Pharmaceutical Conference certainly filled a gap. The Paris Pharmaceutical Society and the American Pharmaceutical Association compiled formularies with similar objects some years before the Conference undertook work of the same kind, and in both France and America the collections were appreciated by the medical profession.

THE EVOLUTION OF ACADEMIC MEDICINE.

THE subject of university education in medicine is very much to the fore just now. The Carnegie Report on "Medical Education in Europe," by Mr. Abraham Flexner, endeavoured to crystallise the conception of the "academic ideal" in medical education with a degree of success concerning which there are differences of opinion. Since then the report of the Royal Commission on the University of London has appeared, and has received full attention in these columns. Quite recently,[1] in appraising the conditions dealt with therein as they affect medical education in general, as well as in London in particular, we said that the desirability of the particular changes recommended by the Commission in regard to the London University might not appear very strong until their meaning was looked into, but that when this was looked into, either their dangers might bulk less large or their inevitability might become evident. It is admitted that the practical training received by medical students in London is of the highest order, but it is also certain that the academic teaching has not always been equally distinguished and that the scientific spirit has been too often wanting. We are once more reminded, this time in an address by Mr. G. Grey Turner,[2] that in the academic ideal medical teaching is inextricably intertwined with extensive practical work and the study of the problems of disease. Mr. Turner takes us with him in a rapid view of the work of Kocher, of Berne, of Eiselsberg, Hochenegg, Schauta, Wertheim, Zuckerkandl, and Lotheissen, of Vienna, of Tuffier, of Paris, and of the Mayos, of Rochester, Minn., and draws therefrom the lesson that, in all these cases alike, the efficiency of the work in its three aspects of curing, teaching, and adding to the progress of medical science is due essentially to organisation, whereby a large part of the work is undertaken by assistants working loyally in conjunction with, but under the control of, their chief. But adequate assistance, meaning thereby assistance that has been trained up step by step, with ample opportunities for individual effort and research, would be unattainable without some stimulus beyond the meagre emolument that it is possible to offer. This stimulus is to be found in the hope of preferment in proportion to the conscientiousness, the zeal, the competence, and the value of the work accomplished during the novitiate. The first need of British surgery—and this applies surely to all branches of medical work—is, according to Mr. Turner, "recognition by performance"—the power to go into the open market for the best available men to fill the professorships as they fall vacant. The prizes must seek out the competent; not the competent seek—and often in vain—the prizes. When this is attained there will be no lack of capable men willing to work and wait, regardless of the meague emolument, for the ultimate recognition of their attainments; and so the second "need of British surgery" will be fulfilled. That need is for ample organised assistance and accommodation, for this alone, says Mr. Turner, can enable a head of a clinic "to have an enormous surgical [or medical] output, to hold a foremost place as a teacher, and yet to have time to devote particular attention to the special branches of the work which interest him or in which he happens to have the greatest opportunities"; and he cites Professor Eiselsberg as a conspicuous example of the truth of his words. It must not be forgotten that conditions have materially changed, more perhaps in surgery than in other directions, in the past few decades. Patients pass through the hospitals in a perfect torrent nowadays as compared with the trickling streamlet of only a few decades back; the number of operations is perhaps four times as many now as it was some 20 years ago; while modern methods of diagnosis and treatment have enormously both increased and multiplied the demands on the time and energy of the hospital medical staffs. The subdivision of labour, therefore, has become imperative, and this demands direction and coördination, duties that are incompatible with personal work at minor details. Yet it cannot be denied that, considerable as have been the additions to the teaching staffs of our great medical schools, the increase in the clinical *personnel* has by no means kept pace with the increased work involved, if all three functions of the university hospital are to be adequately fulfilled.

[1] THE LANCET, June 7th, 1913, p. 1607, the Report of the Royal Commission on University Education in London.

[2] What British Surgery Needs. Presidential Address delivered at the meeting of the Newcastle-upon-Tyne Clinical Society, Oct. 3rd, 1912. By G. Grey Turner, M.S. Durh., F.R.C.S. Eng. Newcastle-upon-Tyne: Easy and Best. 1913.

ANOMALIES OF THE LUNACY LAW.

IN an article before us reprinted from the *Law Quarterly Review*, April, 1913, the authors, Mr. T. H. Holt-Hughes and Mr. W. H. Gattie, call attention to anomalies and shortcomings of the Lunacy Law as it at present exists, and express the wish that this important branch of our national health legislation should be codified rather than amended by the sporadic rectification of errors to which some special incident calls temporary attention. As barristers, Mr. Holt-Hughes and Mr. Gattie are naturally interested in the discovery of those inconsistencies and omissions which may long escape public notice through nothing occurring to call attention to them, but the existence of which should be present to the mind of lawyers likely to meet with concrete cases in the course of practice. The position of lunatics in relation to the criminal law has no doubt roused more attention on the part of members of the legal profession engaged in the prosecution or defence of prisoners since the institution of a Court of Criminal Appeal has rendered the accurate study of the criminal law of value to the practitioner and to his client. Our attention is drawn in the present instance to the contradiction involved in a verdict of "Guilty, but insane at the time that he did the act," when the essence of a crime sociologically, and indeed legally, must be the presence, possibly implied, of a guilty intent. The difference in the legal situation of a man clearly insane when called upon to plead to an indictment and that of one brought in the same state before a magistrate upon an offence which can be dealt with summarily is also noted; and, again, the positions of the man so insane that he cannot plead to the indictment, and of another convicted after indictment of the charge laid against him, but found to have been insane when he committed it. The authors point out that the man convicted upon an indictment has whatever rights are given in respect of appeal to the convicted criminal, but that the man too insane at the time of trial to be arraigned in the ordinary way will go into confinement as a criminal lunatic without any possibility of assistance from the Court of Criminal Appeal upon the question whether he committed the offence alleged against him. Of more interest, however, to medical men are some of the points made by the authors upon the

many questions that arise out of the law which governs the making of reception orders and urgency orders in respect of persons to be confined as lunatics. In their opinion recourse is had too often to the urgency order, and its reservation for cases of indisputable urgency is highly desirable owing to its liability to abuse. More particularly, however, they censure, and with apparent justice and authority, the effect in practice of the system of specially appointed justices of the peace and of the authority given to them in the matter of reception orders. It is contended by Mr. Holt-Hughes and Mr. Gattie that although specially appointed justices are numerous, and indeed so numerous that many of them have little or no experience of the actual performance of their functions, they are nevertheless often not to be found at hand when required, with the result that recourse is frequently had to an urgency order with its much easier procedure, instead of to the reception order, for which the certificates of two medical men are required. More especially, however, they complain that the total ignorance of duties which require special study on the part of the justice "specially appointed" renders him apt to perpetrate illegalities of a highly undesirable character. Here they cite an actual instance of such a justice of the peace signing without demur a reception order upon one medical certificate instead of two, and with no petition before him. The "special" assignment of functions of great importance affecting the liberty and health of individuals to a person who is "totally unbiased by any knowledge whatever of his subject" is certainly to be deprecated, the phrase quoted being that of the medical officer of a London hospital, whose experience it expressed. The substitute suggested by Mr. Holt-Hughes and Mr. Gattie for specially appointed justices of the peace is paid "officials with special knowledge of their work, not, perhaps, medical men, but lawyers for choice." Our own emendation of such a proposal would be "not, certainly, lawyers but medical men, without doubt, qualified by training and experience." The whole subject of the treatment of insanity at the hands of the law is one of considerable interest, and the article referred to, stating its arguments as it does clearly and succinctly without endeavouring to cover too much ground, is a useful contribution to the accumulating literature of its subject. It was written at a date when only passing reference to the then contemplated Mental Deficiency Bill was possible.

RESECTION OF CARCINOMA OF THE THORACIC PORTION OF THE ŒSOPHAGUS.

THE *Journal of the American Medical Association* for May 17th contains a preliminary report of a case of œsophageal cancer, in which a tumour extending from a point a little above the lower border of the arch of the aorta downward for an inch or more was successfully removed by Dr. Franz Torek, of New York, from a woman 67 years of age. A gastrostomy had been performed some time previously (the exact date is not stated), and it would appear that the patient was in a fairly good condition. The incision was T-shaped, the long limb occupying the whole length of the seventh left intercostal space, from the posterior end of which it was extended upwards and downwards, the angles of the fourth, fifth, sixth, and seventh ribs being cut through. This gave ready access to the diseased portion of the œsophagus, and the operator was enabled to dissect the vagi away from the tumour with considerable accuracy, the pulse remaining between 93 and 96 per minute throughout this procedure. The difficulty encountered in dissecting that part of the œsophagus which lay behind the aorta was overcome by tying a number of the thoracic branches of the latter and lifting it forward. In order to avoid all danger of leakage from the upper œsophageal stump, this was dissected free from its attachments all the way up to the neck and brought out at an incision at the anterior border of the left sternomastoid muscle. The thorax was closed without drainage, and when the stitches were removed on the seventh day (some were removed on the fourth day) the wound had healed completely. The pulse, respiration, and temperature had become normal by the fifth day. The writer claims this as a success, and justly so from the operative point of view; since, however, this report was published within ten days of the operation, it is a little early to speak of the procedure as absolutely successful. It will be necessary to know whether any late post-operative complications supervened, and whether the patient remained free from evidences of recurrent carcinoma for any long period. Nevertheless, there is no doubt that Dr. Torek's courageous attack upon this desperate disease opens a door of hope for those who are its unhappy victims; and this is the more remarkable because, as Dr. Torek points out, surgeons have hitherto agreed that of all parts of that carefully secluded organ, the œsophagus, the middle third is the least accessible. However, it is the part most often attacked by cancer, and metastasis from growths at this level are relatively rare, so that it is pre-eminently worth while to overcome the operative difficulties if possible; and Dr. Torek seems to be going to claim that this has been done if the later history of the patient is as auspicious as that part of it which is contained in this preliminary report.

ITALY'S ARMY MEDICAL SERVICE IN THE CYRENAICA.

THE "Carrhae in miniature," the replica on a small scale of the defeat of Crassus in Mesopotamia, which all Italy is now deploring, is a loud warning to her of the danger of trusting to indigenous scouts for information sure to be inexact, possibly treacherous, especially when unchecked by field-telegraphy, and in the absence of orientation in the geographical sense. Misled by the native assurance that the Arab enemy was only some 500 strong, weakly commanded, and badly equipped, the 2000 Italians marched to certain destruction, having on the previous night been engaged up to the small hours in cleaning their weapons and making hurried preparations for easy victory. The *débâcle* which ensued cost no fewer than 613 in dead, wounded, and missing out of the 2000, the loss being especially disastrous in officers, of whom 8 were killed, 27 wounded, and 4 "dispérsi"—that is, untraceable. But the feature of the engagement which has most interest for us is the astounding inadequacy of the medico-military preparation—in contrast to the splendid work of that service already recorded in THE LANCET, by which, thanks to the ambulance organisation in the fighting line and also to the hospital tendance in quarters, the wounded were promptly and effectively dealt with, not only, be it remarked, in the invading force, but even in that of the enemy—of the Turks at the outset and of the Arabs in the later vicissitudes of the war. According to the careful report of the war correspondent of the *Gazzetta del Popolo* of Turin—a journal noted for its interest in medical details—the medico-military service attached to the expedition was well-nigh a negligible quantity, the ill-inspired confidence of the commander in the certainty of an easy or bloodless victory having caused the reduction of the service in question to a few surgeons, assisted by a meagre *personnel*, and provided with miserably inadequate means of dealing with those of the wounded who were fortunate enough to have been brought out of fire. At the redoubt "Lombardia," says the war correspondent, which ought to have received and accommodated the relays of those placed *hors de combat*, the transport service was flagrantly

defective, the ambulance itself being "absolutely wanting in the most elementary appliances and medicaments, surgical or therapeutic, down even to the requisite drugs and dressings." Not till a late hour were those essentials brought "di urgenza" (by urgent dispatch) from Denza—in an automobile, to wit—while in tardy succession rough rustic carts, requisitioned wherever possible, were an all too insufficient supplement to the four "ambulanze a cavalli" (horse ambulances), which were, with barely five "camions," all the means available for the conveyance of the wounded to the redoubt "Lombardia." What wonder if, as we are informed, not a few of the severer cases died shortly after reaching the hospital, accommodated, as they were, in company with the dead, on "a little straw" in the clumsy, heavy, jolting carts impressed for the occasion? Italy, it might have been thought, had profited sufficiently by her Abyssinian experience, particularly in the disasters of Dogali in 1887 and of Adua in 1896, to have shed her exuberant confidence and to have put in practice the forethought, the circumspection, the preparation, never more necessary than in those "little wars" with savage tribes which the Duke of Wellington described as singularly prolific in the "unexpected." Her Parliament is already agitating for full inquiry into the "gross mismanagement somewhere" (stereotyped phrase!) which all too plainly accounts for the Ettangi *débâcle*, in which the military element seems to have overlooked the medical as being not less vital than itself in the complex operations of war.

THERAPEUTIC ACTION OF INTERNAL SECRETIONS.

THE influence of the various ductless glands on the physiological processes of the body is now well established, and in the case of the thyroid at least the therapeutic use of the substance of the gland is universally adopted in cases of myxœdema and cretinism, while good results are recorded from time to time from the employment of other gland preparations. It is not yet clear to what extent the ductless glands form a correlated system, in which the products of one organ assist or balance those of another, but many observations point to the existence of some mutual influence. For example, in Graves's disease the thymus is often found to be persistent and enlarged, and if the suprarenal glands are removed in rabbits the pituitary body becomes hypertrophied. Hypertrophy of this gland may also be encountered after thyroidectomy, while in myxœdema along with atrophy of the thyroid gland the genital organs also waste. In acromegaly, which seems to be associated with over-action of the pituitary gland, the thyroid may be enlarged and the genital organs diminished in bulk. If this correlation of effects really exists, it is theoretically possible that for therapeutic purposes the use of a combination of gland preparations might prove superior to that of one alone. The experimental employment of such a combination has been carried out by Dr. A. S. Woodwark, who records his observations in the current volume (1912) of *St. Bartholomew's Hospital Reports*. The type of disturbance caused by excessive or defective action of the ductless glands is seen either in sexual changes, in developmental defects, in disturbances of nutrition, such as rickets and obesity, or in mental deficiency. Such disorders, therefore, afford the most likely ground for trial of the remedial efficacy of gland preparations. Dr. Woodwark prepared tablets consisting of one grain each of thyroid, thymus, suprarenal, and pituitary substance, and made use of these in cases of myxœdema, of Mongolian idiocy, of obesity, and of rickets. Three patients suffering from myxœdema and one cretin all showed improvement, and three Mongolian imbeciles, aged respectively 6, 4, and 2 years, all improved mentally, becoming cleaner, quieter, and more intelligent. Several cases of active rickets, one being associated with achondroplasia, all seemed the better for taking the tablets, and two obese subjects out of five also improved, but of the remaining three one suffered from palpitation apparently due to the remedy. These figures are not large enough to enable us to draw any definite conclusions as to the value of combined gland preparations in the treatment of disease, but they at least encourage further attempts to investigate this line of medication.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ELECTION OF COUNCIL.

ON Thursday, July 3rd, the Fellows of the College will meet to elect four members of Council to fill the four vacancies which have been caused by the expiration of the term of office of Mr. Edmund Owen and Mr. C. H. Golding-Bird, by the death of Mr. Clinton Dent, and by the resignation of Mr. W. Bruce Clarke. Many years have elapsed since at the annual election of members of Council none of the retiring Fellows has offered himself for re-election. There will be four vacancies, and four new members of Council must be appointed. The candidates are, in order of seniority: Mr. J. Ernest Lane, of St. Mary's Hospital, who obtained his Fellowship in 1882; Mr. L. A. Dunn, of Guy's Hospital, whose Fellowship dates from 1884; Mr. Jonathan Hutchinson, of the London Hospital, who also obtained the Fellowship in 1884; Mr. H. Betham Robinson, of St. Thomas's Hospital, who obtained the Fellowship in 1887; Mr. G. Walter Spencer, of Westminster Hospital, who also passed the Fellowship in 1887; and Mr. H. J. Waring, of St. Bartholomew's Hospital, whose Fellowship dates from 1891. There is no provincial candidate this year, perhaps because none of the vacancies is due to the termination of office of a provincial Fellow.

ABSENCE OF THE CORNEAL REFLEX AS A SIGN OF DEATH.

A SIGN of death frequently relied upon is abolition of the corneal reflex. In the *Gazette Médicale de Paris* of May 28th Dr. René Netter has called attention to the fact that it is not absolutely reliable. He was called to a boy, aged 5 years, who had for several days fever, coryza, and dysphonia. There was unilateral lacunar angina. An injection of antitoxin was at once given, and a moist atmosphere and hot compresses to the throat were prescribed. In the middle of the night Dr. Netter was called again and told that there was increasing dyspnœa and that the child was dying. On arriving he found the child unconscious and without movement, sensibility, or corneal reflex. The pulse was very rapid and unequal, and the respiration was reduced to the last gasps. Fortunately, he came prepared for tracheotomy, which he performed on practically a cadaver, cold and inert. The hæmorrhage consisted of only a teaspoonful of black asphyxial blood. The entrance of air into the trachea gradually restored animation. Soon the child made efforts of expectoration. The corneal reflex reappeared but was unstable, disappearing when he was allowed to become quiet and the respiration to become enfeebled and reappearing in some seconds under the influence of artificial respiration or of hot applications to the præcordium. A similar modification of the corneal reflex from moment to moment is observed according to the depth of chloroform anæsthesia. Dr. Netter also pointed out that too much importance should not be attributed to the disappearence of the corneal reflex on the paralysed side in hemiplegia. It enables the side of the lesion to be determined early but should not be regarded, by itself, as indicating unusual gravity. It is true that the corneal reflex is one of the last

conditions to disappear in comatose states and during anæsthesia. But its disappearance should not cause the practitioner to abandon a case or to hesitate to perform an operation *in extremis*. With regard to diphtheria in particular, the dictum of Archambault may be recalled: "Do not hesitate to operate unless the child is positively dead."

RECENT STUDIES ON BERI-BERI.

IT is now quite generally accepted that beri-beri is usually the result of a too exclusive diet of polished rice or of other foods which are deficient in the neuritis-preventing substance known sometimes as "vitamine." It has also been demonstrated that polyneuritis gallinarum is caused by a similar diet; and although it cannot be asserted that these two diseases are identical, it may nevertheless be assumed that the symptoms in each are due to the same pathological process, and that their etiology is similar. If this be conceded, it follows that probably any deductions, based upon feeding experiments upon fowls, concerning the relation of diet to beri-beri, may safely be accepted. For some years careful investigations on this subject have been carried out at Manila, among others, by two American experts, Captain Edward B. Vedder, of the Medical Corps of the United States Army, and Professor Elbert Clark, of the University of the Philippines. The results obtained by these observers have lately been published in the *Philippine Journal of Tropical Medicine* (Vol. VII., Section B, No. 5). Many feeding experiments were made on fowls and very careful pathological examinations were carried out. It is now stated that these inquiries prove that there are three forms of polyneuritis gallinarum—viz., (1) a form, that most commonly seen, in which the symptoms of neuritis and those of general prostration are combined; (2) a form in which there is pronounced neuritis, but the animal remains otherwise in good health; and (3) a fulminating form in which the symptoms of neuritis are absent, but great prostration occurs. It is inferred that similarly there are three forms of beri-beri. After alluding to the researches of Funk, who found that chemical changes took place in the brains of fowls suffering from polyneuritis gallinarum, Vedder and Clark contend that this disease is not a simple peripheral neuritis, as was formerly supposed, but that on the contrary the entire nervous system is affected. The symptoms are not chiefly referable to degeneration of the peripheral nerves, since degeneration occurs before the symptoms arise; also advanced degeneration may be present, but accompanied by no symptoms at all; and, moreover, degeneration of the nerves remains after recovery has taken place. The feeding experiments showed that meat and potatoes contain a certain but relatively small amount of the neuritis-preventing substance, and this may afford an explanation of the immunity from beri-beri of those races in which meat and potatoes are main articles of diet. On the other hand, a man who eats a pound of rice daily with a small or occasional addition of meat will not receive complete protection from beri-beri, though the onset of the disease may be delayed by the meat that has been consumed. Potatoes, it appears, contain the neuritis-preventing substance, and those therefore who live largely on them do not contract beri-beri. It is noteworthy that both meat and potatoes when cooked appear to afford more protection than when eaten raw, but no satisfactory explanation of this has as yet been found. The feeding experiments also revealed the very important fact that white bread is lacking in the necessary vitamine which prevents the development of neuritis. It is interesting in this connexion to note the statement that beri-beri began to appear among the crews of Norwegian sailing ships in 1894, the year in which white bread was substituted for the rye bread consumed largely prior to this date by the sailors. Peas and peanuts (and probably most leguminous seeds) possess the same protective properties against beri-beri as do beans and mongos (katjang idjo). This knowledge is of some practical importance, for the addition of peas to a rice diet will entirely prevent the development of beri-beri among the consumers, whether they be native coolies on shore or sailors employed during long voyages on ships. Vedder and Clark regard vitamine as an organic base present in varying amount in different foodstuffs, which prevents the appearance of polyneuritis gallinarum among fowls, and presumably beri-beri in man; it is an essential element for normal metabolism of nerve tissue. These observers throw out the suggestion that there may be two kinds of vitamine, one the neuritis-preventing substance and the other that which prevents general prostration and cardiac failure. Such a hypothethis would account for the three forms of polyneuritis in fowls mentioned above. It would also explain some of the apparent difficulties which have arisen in connexion with beri-beri in its "wet" and "dry" forms. It might be found that the so-called epidemic dropsy which some regard as a manifestation of beri-beri, is caused by the lack of the second vitamine and that the various symptoms observed in "ship beri-beri" are due to the proportions in which the two essential vitamines are wanting in the dietaries. At present, it is admitted that there is no confirmation of this hypothesis by the experiments already made, but we are glad to learn that further investigations on the subject are now in process of being carried out in Manila by Captain Vedder with the assistance of some of his colleagues.

MICROCOCCUS TETRAGENUS SEPTICÆMIA.

WE publish in this week's issue of THE LANCET a record of a case of chronic septicæmia due to the micrococcus tetragenus observed by Sir John Byers and Dr. Thomas Houston, which is noteworthy, not only from its comparative rarity and its clinical interest, but also because of the systematic and careful way in which it was dealt with, and because of the valuable comments made upon it by these two observers. The patient was a boy between 10 and 11 years of age, who for eight years had had recurrent attacks of acute illness, which had tended to become longer, more severe, and more intractable. The attacks usually began as a "cold" in the head and naso-pharynx, spreading to the ear, to the lungs as a broncho-pneumonia, and to the intestinal tract, causing diarrhœa. The attack which forms the basis of the communication now published by Sir John Byers and Dr. Houston commenced in Decembe', 1912. When first seen the boy was suffering from catarrh of the nose and throat, which spread to the ears. At first he improved, but early in January a fresh attack supervened. It soon spread to the ears and became complicated by a broncho-pneumonia. Bacteriological examination at this stage revealed the presence of the micrococcus catarrhalis, the streptococcus, and a few diplococci. A mixed autogenous vaccine of the first two organisms was then given without benefit; indeed, the patient shortly afterwards became more acutely ill with broncho-pneumonia and pleurisy. Further examination of the cultures showed the presence of the micrococcus tetragenus, and the same organism was recovered by examination of blood culture. The fact that this organism was pathogenic in this case was then confirmed by opsonic index determinations. An autogenous vaccine was at once made from it and used in the treatment of the case with the best results. At a later stage a pseudo-diphtheritic organism was found in the discharge from the ears and a vaccine was made from this as well. In commenting on this interesting case, Sir John Byers points

out that it illustrates the great progress made in recent years in the diagnosis and treatment of disease, since we are now enabled to make an accurate bacteriological diagnosis in many cases which would formerly have remained obscure and to base a rational therapy upon the information so obtained. He suggests that the chronic nature of the case under consideration was probably due to a chronic infection by the micrococcus tetragenus in the presence of other organisms. Dr. Houston, in commenting upon the bacteriological aspects of the case, discusses the evidence upon which the causal rôle of the micrococcus tetragenus was established. He also points out the difficulties encountered in demonstrating the bacteriological cause of affections of the respiratory tract. We would draw attention to his statement that the failure of vaccine therapy is as often due to incorrect bacteriological diagnosis as to the limitations of this method of treatment. The brilliant result obtained in this case should be an encouragement to apply the same careful and scientific methods employed by Sir John Byers and Dr. Houston in other obscure diseases of the respiratory tract.

SANITARY DIFFICULTIES AT ILFORD.

IN an annotation entitled "The Difficulties of Public Health Administration" in THE LANCET of April 12th last, we drew attention to the criticisms of local sanitary affairs which had been published in his annual report for 1912 by Mr. C. F. Stovin, medical officer of health for Ilford. We now learn from Mr. Stovin that, as we anticipated, he has been successful in his endeavour to obtain a public investigation of the whole matter. The Local Government Board will hold an inquiry at the Ilford Town Hall on July 9th next at 11 o'clock. Important general questions are involved in the present dispute at Ilford, and everything is to be gained by a full and impartial inquiry.

THE Historical Medical Museum at 54A, Wigmore-street, London, W., which has been organised by Mr. Henry S. Wellcome, will be opened on Tuesday, June 24th, at 2.30 P.M., by Dr. Norman Moore, president of the section of History of Medicine, Seventeenth International Congress of Medicine.

A CRITICISM OF THE REPORT OF THE DEPARTMENTAL COMMITTEE ON SIGHT TESTS.

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.,
LATE HUNTERIAN PROFESSOR OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; LATE MEMBER OF THE INTERNATIONAL CODE OF SIGNALS COMMITTEE.
(*From the Institute of Physiology, University College, London.*)

THE committee was appointed "to inquire what degree of colour-blindness or defective form vision in persons holding responsible positions at sea causes them to be incompetent to discharge their duties; and to advise whether any, and if so what, alterations are desirable in the Board of Trade sight tests at present in force for persons serving or intending to serve in the merchant service or in fishing vessels, or in the way in which those tests are applied." I propose in this criticism to confine myself to the first part of the reference—namely, that dealing with colour-blindness.

The committee give the objections which it states have been raised to the wool test, but it only states minor objections and entirely omits the main objections which I and at least one other witness gave in our evidence. These objections are that the wool test, even in its present form, allows a very large number of persons who are dangerously colour-blind to pass, and in addition rejects many normal-sighted persons and those with only slight and unimportant defects of colour-perception. It is evident that the committee has not recognised how very defective a man may be and yet pass the official test of the Board of Trade with the ease and rapidity of a normal-sighted person. Most readers would gather from the report that the wool test detected all but a trivial number. This is not the case. In THE LANCET of June 22nd, 1912, p. 1684, I have given an example of a very dangerous case of colour-blindness which I examined for the first time in the presence of Professor F. T. Trouton and Professor A. W. Porter. Examined with the official test of the Board of Trade the examinee picked out and matched all five test colours, green, rose, red, purple, and orange-yellow, easily and correctly; he did not touch a confusion colour. Had I examined him by this test alone I should have passed him and had no suspicion that he was colour-blind. Examined with the largest aperture of my lantern measuring seven-eighths of an inch in diameter, at a distance of 20 feet he called red A, nothing and green; yellow, red; red B, white; neutral, green; and green, white and red. This test was the shortest of any I made and lasted less than a minute, as I only asked the subject of it at the most to name 15 lights.

The committee, whilst stating that it has thought it advisable to adopt a classification which does not imply any particular theory, suggest a classification of colour blindness based on the flicker method of photometry. This classification does imply a particular theory. It is based on two assumptions, first, that colour-blind persons can be classified by measuring the luminosity of their colour sensations; secondly, that it is possible to do this by means of the flicker method of photometry. The classification is the most hypothetical and the worst in existence, as the assumptions are in direct opposition to the work of other observers. Everything connected with the classification is speculative and has not been proved. There is the strongest evidence that neither assumption is justifiable, and if either be disproved then the conclusions of the committee are fallacious. In the flicker method now suggested arrangements are made by which a small white screen is illuminated alternately and in rapid succession by the coloured light it is proposed to measure and by white light, and the brightness of the white light is altered till the illumination of the screen appears to the observer to be quite steady. When this is the case the brightness of the coloured light and that of the white are taken as equal. If these brightnesses be not equal, then the illumination of the patch appears to flicker. The committee has taken as a measure of the degree of colour abnormality of the different observers the ratio of the brightness obtained by this flicker method of a red (wave-length 609 $\mu\mu$) to that of a green (wave-length 541 $\mu\mu$) divided by the value of this ratio for a person possessing normal vision.

The following objections may be urged against this classification:—

1. The flicker method of photometry has been shown to give different results from other methods of photometry. Authorities[1] on the subject are not satisfied that the flicker method is a reliable method of photometry.

2. When the luminosity is constant the flicker between two coloured surfaces disappears with varying rates of rotation with different persons and with different colours.

3. Many persons find the flicker method extremely irritating to their eyes, and no accurate results can be obtained in these cases.

4. Even if the method were an accurate one a supernormal sensitiveness to either red or green would alter the ratio and make the person appear to be colour-blind when he had a colour sense above the normal. This is not uncommon in the case of the red end of the spectrum and therefore a man who is particularly efficient would be rejected as a so-called green blind.

5. Alteration in the maximum of the luminosity curve when it affected one of the colours under consideration would make a man appear to be colour-blind when he was not. Such alterations of the luminosity curve are not uncommon with normal colour perception (A. König).[2] In accordance with the above Frl. v. Maltzew found that the flicker value varied very considerably with normal sighted persons.[3]

[1] J. S. Dow, Proceedings of the Physical Society, vol. xxii., p. 80. The Electrician, vol. lviii., p. 607. H. Morris-Airey, Journal of Institute of Electrical Engineers, vol. xliv., p. 177. A. P. Trotter, Illumination, p. 181. O. Grünbaum, Journal of Physiology, 1898, vol. xxii., p. 433.

[2] Helmholtz: Festschrift, 1891, p. 350.

[3] Zeitschrift für Physiologie der Sinnesorgane, vol. xliii., p. 75, 1909.

6. I have shown that defects of light perception are quite distinct from defects of colour perception.[4] At the best the method can only measure defects of light perception.

7. Many colour-blind persons have a normal luminosity curve (A. König).[5] These persons appear absolutely normal by this method, so that those [6] who have had much experience in hetero-chromatic photometry state that many colour-blind persons make the same readings as the normal-sighted. I have examined many dichromics who have made exactly the same estimation of brightness as myself when different colours were compared. This statement has been supported by numerous observers, as, for instance, von Kries,[7] who states that green and bluish-red lights, which to the deuteranope (dichromic with unshortened spectrum) appear equal, also appear equally bright to the normal sighted. I examined a dichromic of this kind very carefully with Professor A. W. Porter, the subject being asked to say when any light was visible, pure green light of very feeble intensity being projected upon the screen. In every case in which the faintest light was visible to Professor Porter and myself it was visible to the examinee.

8. The method gives us no criterion of the degree of dangerous colour-blindness.

9. Simmance and Abady[8] state that in certain conditions of the nervous system the flicker does not disappear at all, even when there is equality of intensity.

10. In cases in which there is considerable defect of light perception—as, for instance, shortening of the red end of the spectrum not affecting the wave-length 609 $\mu\mu$, a man would appear absolutely normal-sighted whilst not able to see many red lights at all.

11. When one of the lights is coloured there are two kinds of flicker, one due to the illumination and the other due to the colour. If a white light and a coloured light of exactly the same luminosity be employed flicker is still noticed; this flicker disappears with a certain rate of sequence, which varies with different persons.

12. Variation of the surroundings causes a change in the rate at which flicker disappears.[9]

13. It is not really known what the flicker method really measures beyond the fact that two impressions are blended into one in certain conditions—that is to say, we measure the persistence of a sensation in certain conditions.

14. When light acts upon the eye the time at which the maximum effect is produced varies with the luminosity, being shortest with the brightest light. This is evidently an important factor, because, on the other hand, the greater the intensity of the primary light the brighter is the positive after-image and the longer its duration.

15. The relative luminosities of colours are not the same by strong and by weak light.

16. T. C. Porter[10] has shown "that the apparent luminosity of two flickerless discs under the same illumination may be precisely the same, and yet the angle of the black sector may be different in the two discs; indeed, one disc may be entirely white, and the other may have a black sector by no means small under some conditions of illumination, and these two may, to the eye, form a perfect match when flickerless."

17. Flicker disappears sooner from the central than the peripheral parts of the retina. Exner[11] and Charpentier[12] also found that the size of the retinal image was a factor in the disappearance of flicker. When the size of the retinal image was increased the point of fusion was raised. Billarminoff[13] found a higher frequency necessary for fusion on the nasal than on the temporal half of the retina with certain kinds of light.

18. The results appear to come out differently when red is flickered against green than when the flicker is made against white in each case. I examined two dichromic cases by this method, flickering red against green. A red and a green glass which were quite opaque to an incandescent electric light when combined were compared with the Simmance and Abady flicker photometer. Both cases appeared absolutely normal on this method, the ratio being 4·1 red/green, mine being 4·1 red/green. When one of these cases was examined by Professor Watson in my presence, various colours being compared with white, he appeared to a certain extent defective.

There are many other minor factors, such as fatigue and condition of health, which influence flicker. All these are of importance when it is a question of a small difference in the ratio which would decide whether a man loses his livelihood or not.

The committee would have been much better advised to have recommended some well-known method based on the facts of colour-blindness instead of upon a method which it admits had only had a short trial, and which has a very hypothetical and highly questionable basis. The committee conducted a number of experiments with coloured lights. I think it would have been better if instead of taking those who had been found colour-blind it had adopted the plan of first ascertaining by means of coloured lights whether a person was competent to act at sea; it would then have found that about 25 per cent. have diminished colour perception compared with the other 75 per cent.; it would also have found that many who failed to distinguish red and green lights at a distance of a few yards were able to pass the Holmgren test with the greatest ease. It is not a question of 1 per cent. of border-line cases. I have stated that about 6 per cent. should be definitely rejected. German authorities say 8 per cent. to 10 per cent., and I must confess that the border-line region is very large. The committee had an opportunity of settling this point; 8 per cent. to 10 per cent. is rather different from the 3·25 per cent. of Holmgren. The fact that normal-sighted persons are rejected by the wool test is proved by the Board of Trade reports, which show that about 50 per cent. of those who appeal are found to have been rejected wrongly, and the fact that colour-blind persons are passed is also proved by the fact that men who have passed on one examination are rejected on a second or third examination.

In these experiments three men supposed to be slightly red deficient made no mistakes at all. A man whose ratio was 0·87, and who was therefore, according to the method adopted, much more colour-blind than two other men whose ratio was each 0·95, made no mistakes, whilst the two other men made 2·9 and 1·9 per cent. mistakes respectively. The fact that one colour-blind man made 29 per cent. of mistakes without binoculars at the farthest distance and none at all with requires explanation. The recommendations of the report have been adopted, the wool test is to be retained, but further modifications are made with it. The skeins are divided into groups and a dark brown skein is added. The necessity of dealing with the whole of the skeins in doubtful cases was first pointed out by me over 20 years ago.[14] The committee entirely missed the most important points of all in the use of any test in which wools are employed. The first is that the test must contain the confusion colours of the colour-blind—that is to say, the colours which the colour-blind name or classify wrongly. A man who has shortening of the red end of the spectrum may name or match ten pink wools correctly, but call an eleventh pink wool blue because it only differs from the blue in that it reflects red rays which occupy his shortened portion and which he therefore cannot see. A haphazard selection of wool is of little use. The second point is the absolute necessity of colour names. Unless colour names be used, normal-sighted persons will be rejected and colour-blind men will be passed. This I have demonstrated repeatedly. When a man knows the four chief colour names, red, green, yellow, and blue, there is no excuse for him when he is told to pick out green wools if he select several red ones as well. If, however, no name be mentioned, but he is only told to match the test colour, he may put different colours of the same shade with it under the impression that similarity of shade is more important than that of colour. Even artists will do this and defend their action.

The committee has adopted the unprecedented course of

[4] Proceedings of the Royal Society, B., vol. lxxxii., 1910, p. 458.
[5] Loc. cit.
[6] Simmance and Abady: Proceedings of the Physical Society of London, vol. xix.; also Philosophical Magazine, April, 1904.
[7] Helmholtz: Physiologischen Optik, third edition, Second Part, p. 352, 1912.
[8] Loc. cit.
[9] Sherrington: Journal of Physiology, 1897, vol. xxi., p. 33.
[10] Contributions to the Study of Flicker, Proceedings of the Royal Society, A., vol. lxxxvi., p. 502, 1912.
[11] Sitzungsberichte der K. Akademie der Wissenschaften, Wien, 1868, Band lviii., Abth. 2, S. 601.
[12] Archives d'Ophthalmologie, Paris, 1890, tome x., p. 340.
[13] Archiv für Ophthalmologie, 1889, Band xxxv., Abth. 1, p. 25.
[14] Colour-blindness and Colour Perception, International Scientific Series, 1891 Edition, p. 282.

constructing a lantern of its own. The chief difference between its lantern and that of mine is that it does not require the superposition of coloured glasses and, therefore, is supposed to be more easy to work by non-expert examiners. It shows one or two lights simultaneously. In this respect it is similar to a lantern I have had constructed and which can show three lights similar to those in my ordinary lantern simultaneously.

With regard to the first point, my lantern was constructed at the request of and for the Board of Trade over 20 years ago. It is now the official test of the Admiralty and most of the principal railway companies, and is largely used abroad. It is used by non-expert examiners without complaint, and during the whole of my experience I have not heard of a single case of colour-blindness which has escaped detection by it.

The question of one or two lights was one which occupied my attention for a considerable time, especially in view of the fact, which I was the first to discover, that simultaneous and successive contrast are increased to the colour-blind. I was naturally anxious to turn this fact to account. I found, however, that I gained nothing by increasing the number of lights, and that in many cases it was a source of error. A second or third light could have been easily added to my lantern, but besides unnecessarily complicating the apparatus it would have served no useful purpose. All the results which are obtained with simultaneous contrast are obtained even more effectively with successive contrast. It will be noticed that when lights are seen in ordinary conditions they are conditions of successive contrast and not of simultaneous contrast. An observer rarely keeps his eyes definitely fixed on one light whilst he names those adjacent to it, but moves his eyes so that the images of the respective lights fall successively on his foveas. When more than one light is employed all the disadvantages of matching as against naming are introduced. It will be seen that by presenting one light after another we are fulfilling all the necessary conditions, only that the light is moved instead of the eyes, sufficient time being allowed to elapse to enable a normal-sighted person to recognise readily the true colour of the next light without being confused by the after-image of the one he has just seen. Many nervous normal-sighted name a yellow light seen between two red lights as green, and it does look green to them from ordinary physiological conditions. They look first at one red light then immediately at the yellow light, then at the second red light, and then again at the yellow light until they feel sure that the centre light is a green light and say so. I have never met with a normal-sighted person who has miscalled the unmodified light of my lantern either red or green.

The most difficult point in any test for colour-blindness is to construct a test which a colour-blind person cannot pass by coaching. Nearly every test can be passed in this way, including many tests which would be fairly efficient if the candidate had not seen them before. I was the first to point out the necessity of a lantern test, and I was not satisfied with my lantern until, do what I would, I could not coach a man through it. It is absolutely necessary to have means of regulating the luminosity of the light. In the lantern suggested by the committee this cannot be done, and many colour-blind persons would learn the sequence and appearance of the colours and with a little practice would tell all the colours on the methods suggested by the committee. There are many other essential details which have not been considered. Thus the exact spectroscopic composition of the colours is of paramount importance. It is obvious that the committee, with so many of its members strongly in favour of a wool test, were not in sympathy with the lantern test, and were certainly not the right persons to construct an efficient lantern test. It will be seen from the report, p. 16, paragraph 68, that the possibility of dispensing with it and going back to the wool test is mentioned. In fact, with the lantern suggested it is quite possible that this might come about.

I entirely disagree from the committee that non-expert examiners would find the lantern it suggests any easier to use than mine, especially as I have given the most explicit directions as to its use.[15] If non-expert examiners be employed they should be very carefully trained, and then they will have no difficulty in superposing two glasses. A man who did find difficulty would certainly not be fit for an examiner.

It is absolutely necessary in the interests of the nation and the mercantile marine that an unbiased committee should be appointed to decide the degree of colour-blindness which should exclude candidates from the mercantile marine. It is very hard for men who have been 15 or 20 years at sea and have passed the Board of Trade tests three or four times to be suddenly rejected when there has been previously no suspicion of colour-blindness.

[15] Hunterian Lectures on Colour Vision and Colour Blindness, Kegan Paul and Co., 1911.

ST. GEORGE'S HOSPITAL AND THE KING'S FUND.

A GENERAL court of the governors of St. George's Hospital was held on Thursday, June 12th, to elect new governors, to alter certain rules with regard to the appointment and payment of bacteriologists, and, in particular, to consider the question of confirming an important resolution of the house committee of April 30th, which had been referred to the decision of the next court.

The resolution which Mr. A. KEYSER placed before the court ran as follows:—

> That the hospital revert to the former method of keeping accounts, and provide the difference between £1000 and the sum now expended on the bacteriological and pathological departments from the Discretionary Fund, in accordance with the suggestion of the King's Fund.

Mr. Keyser, in support of this resolution, said that the disagreement between the hospital and the King's Fund was unfortunate and that for his part he saw the sense of the action of the Fund. St. George's Hospital defrayed out of its general funds things that were paid for by other hospitals out of special funds or discretionary funds, and he recommended, speaking as a man of affairs with experience of public business, that St. George's Hospital should now come into line with the other charities.

The resolution was formally seconded.

Mr. A. W. WEST, the treasurer of the hospital, said that it was difficult for many of the governors to understand this question and accordingly made the following statement:—

> I see there are a good many governors present who are not members of the house committee and are therefore probably not conversant with all the facts. I do not propose to go into any very great detail in explaining these facts, as I am glad to be able to announce that the resolution of the house committee of May last to appoint an independent committee to inquire into, and report upon, the whole matter has become an actual fact, and that Lord Moulton of Bank and Sir George Hayter-Chubb have already started their investigations. I find it so difficult for many of the governors to understand this question that I would, with your permission, say a few words on the subject.
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> As many are aware the change in the method of keeping our accounts was not done until after I had communicated with the King's Fund and received their reply approving of the basis upon which the accounts should be kept; that was as far back as March, 1909. A perfectly clear and straightforward matter, and carrying out one of the recommendations of what is known as the Fry Commission report. That all money spent for the direct treatment of patients should be taken from the general fund instead of from what was previously known as a discretionary fund.
>
> The discretionary fund was a fund started in 1906 in order, if necessary, to be able to assist the school financially, and for some two years it was necessary to render such assistance, and at the end of that time, I am glad to say, owing to alterations in the medical curriculum and the general assistance of the public in subscribing to an endowment fund for the school, any further assistance became unnecessary, and the school has never asked for any such help since.
>
> It was not until October, 1910, or more than 18 months after the Fund had agreed with the principle of the letter of March 10th, 1909, that any sort of question was raised by the Fund.
>
> On Dec. 14th, 1910, at a meeting of the General Council of the Fund, it was agreed to suspend the grant to St. George's Hospital until the Fund "is satisfied that the general account is clear of any payments on account of medical education."
>
> This was followed on March 29th, 1911, by a meeting of the general council adopting the previous report, who state, to put it briefly, that the cost of laboratory investigations at St. George's Hospital is 2¼ to 2½ above the average at 15 other hospitals, and "that they must mark their disapproval of an expenditure so far in excess of the average"—a different reason, I venture to suggest, for withholding the grant than that originally put forward, that money was taken from the general account for medical education.
>
> We wrote saying that we could not agree that their contention with regard to figures was correct, and on July 19th, 1911, we withdrew our application for a grant for 1910. Later on we suggested that, as the King's Fund and ourselves were not in agreement on matters of fact, an independent committee should be appointed to consider the whole question, and in effect agreeing further that we would be willing to abide by the decision of such committee.
>
> The King's Fund, in their letter of April 23rd, 1913, reply "that the council do not consider that the question is one which requires the

application of exceptional measures of a kind which do not appear to be contemplated by the Act incorporating the Fund."

In the report adopted by the general council on April 23rd, 1913, St. George's Hospital is asked to take the difference between £1000 and the cost of the bacteriological and pathological work from the discretionary fund, and "that the accounts of St. George's Hospital cannot be held to be clear of any payment in respect of medical education."

This is briefly the position of affairs at present. It must not be forgotten, however, that the late Lord Mayor, Sir Thomas Crosby, held an investigation on behalf of the Sunday Fund, and reported that in his opinion, after an investigation of all the facts,

"That the proportionate amount paid by the hospital and school for the upkeep of the laboratories is a fair and proper one, and that the sums expended upon these departments by the hospital are properly taken from the general funds, being for the direct treatment of the patients."

Now it may well appear to those who have not carefully studied this matter that it is a mere question of the way in which the accounts are kept, and that if the King's Fund asks us to keep them in a particular form we may as well do so, as the responsibility lies with them and not us; but I would point out that this is not quite the case, there are two matters of principle involved.

1. That in all hospital accounts everything for the treatment of patients should be passed through one account and one account only; that to draw a portion of the money for paying for the treatment of patients from subsidiary accounts which do not appear in the general accounts sets up an entirely false position as to the cost per bed, the main consideration in determining the amount of the awards.

2. That if the principle is to be admitted that, because one hospital spends more than another, or an average of others, upon some one branch of its work, therefore it is to receive no grant, then no hospital which takes advantage of the developments of modern progress is to receive support from the King's Fund, for there is no hospital which keeps abreast of the times which does not at some time or another spend more than an average upon some department in advance of others.

It is being argued by some that we have by taking up this attitude lost all grants from the King's Fund, and that therefore we should immediately comply with their request and so not continue to lose this grant for another year, but can it be shown that a single applicant to the hospital for relief who has deserved the benefits of treatment has in any way suffered? It is true, of course, that we have had less to spend; but, on the other hand, other hospitals have had more, as they have had our share. However, we are entitled, I think, to be cleared of such a charge as that we have diverted funds for the purpose of medical education. Personally, I am quite prepared to leave the matter in the hands of those who, through their public spirited action, are investigating the whole circumstances. If in their report they find we have diverted funds for the purpose of medical education I shall know what is the proper course to adopt; but in the meantime, before we accede to this request, I think we had better wait until we have this report, which I trust may be about the end of the month.

As evidence that we are not without sympathisers in this matter, I would point out that we have received additional support in annual subscriptions and donations as a direct consequence, and the only withdrawal has been one of £5 5s. a year, which has been transferred to the Samaritan fund.

I beg to move as an amendment to the resolution before you:—

That we should adjourn the further consideration of this question until we have the report of the committee to which I have already referred.

The amendment having been formally seconded,

Sir HENRY BURDETT spoke in support of the resolution. He said that it would be wrong for him to explain the reasons for the attitude of the King's Fund and that he was only speaking as a governor of the hospital and not as one of the distribution committee of the Fund. He urged that money which was given for the treatment of the sick poor should not be used for educational purposes and said that if there was not sufficient money for these purposes the education fees must be raised or the expenses must be met out of a discretionary fund formed with that object. He appealed, as an old friend of King Edward, to the loyalty of the governors of the hospital, and asked them to acquiesce in the decision of the King's Fund, to remember that he who paid the piper called the tune, and to refuse adjournment.

Mr. WARRINGTON HAWARD having asked if bacteriology played no part in the treatment of the sick poor, Sir HENRY BURDETT said that the charge was that St. George's Hospital spent too much on bacteriology.

Dr. ARTHUR LATHAM said that throughout Sir Henry Burdett's speech, and throughout all the attempts at negotiation with the King's Fund, there had been an underlying accusation that money was diverted from the sick poor for the education of students, and if Sir Henry Burdett did not use those exact words the charge was none the less implied. He pointed out that the Metropolitan Hospital Sunday Fund was satisfied with the method in which the hospital accounts were kept and that the King's Hospital Fund was not satisfied, and that, therefore, an independent inquiry had been started, and he considered that it would be entirely wrong to remove the question from their hands now, and to take ill-treatment from the King's Fund lying down.

Mr. G. R. TURNER considered that St. George's Hospital had been unfairly treated. He thought that the authority of the King's Fund was doubtful, and that at any rate it had no right to dictate about methods of treatment. The medical school of the hospital was self-supporting, and asked for no funds whatever from the hospital now, whatever it might have done formerly. The money spent on bacteriology was spent on methods of treatment, and he disputed the right of the King's Fund to say that a certain amount of money and no more should be spent on this or that particular branch of treatment.

The amendment that the further consideration of the question should be adjourned until the report of Lord Moulton and Sir George Hayter-Chubb had been received was passed by 23 votes to 6.

MEDICINE AND THE LAW.

The Inquest on Lord Leven and Melville.

THE inquest recently held upon the body of Lord Leven and Melville, and reported in the newspapers at some length, afforded an opportunity to the coroner for calling attention again to the necessity for reform in the law relating to coroners' inquests. The deceased, a young man, 27 years of age, met with an accident in the hunting field on Jan. 23rd of this year, severely injuring his skull. On Feb. 9th Mr. Charles A. Ballance operated upon him, removing a piece of bone and arresting hæmorrhage from an artery. Complete success resulted, and on June 9th a platinum plate was inserted, also successfully. The hæmorrhage, however, was renewed during the following night, and though it was stopped by Mr. Ballance as soon as his presence could be obtained, the deceased died on the evening of the 10th. As no evidence of how the original accident occurred was apparently called at the inquest, and as the evidence of Mr. Ballance with regard to the cause of death was not in any sort of dispute, the coroner was justified in referring to the case as one in which, if he had had a discretion to do so, he might well have dispensed with a public inquiry. The case was one of a patient succumbing in the course of surgical treatment long after the original occurrence which led up to it. As a matter of fact, however, a medical certificate had been given without any reference to the coroner, but the registrar had refused to grant a burial order upon it, and had reported the case to the coroner. Meanwhile, the body had been removed from Marylebone, where death took place, to Westminster, and thus came under the jurisdiction of Dr. Oddie, who in the circumstances, the funeral having been appointed to take place in Scotland, courteously met the wishes of the relatives by holding an inquest with the least possible delay, at which a verdict of "Death due to accidental causes" was returned. The case would certainly appear to have been one in which, unless the facts relating to the original accident were to be inquired into, no inquest was needed, the death being regarded as having occurred in the course of surgical treatment long after the original occurrence which gave occasion for that treatment, and a wider discretion exercised within more strictly defined limits would have enabled the coroner to grant a certificate himself after making due inquiries. This he possibly would have done as it was if the case had been originally reported to him otherwise than by the registrar, a certificate to meet such occasions being provided by the Registrar-General. In the case, however, of a death reported to the coroner by the registrar the procedure differs. He then does not grant a certificate, but merely notifies the registrar that he does not intend to hold an inquest.[1] Dr. Oddie in the circumstances, and taking into consideration the hunting accident to which death was ultimately due, felt it incumbent upon him to hold an inquest, and, moreover, to do so was to enable the granting of facilities for burial with the least possible delay. Difficulty and delay arose through lack of simplification and codification of the law, not only with regard to inquests, but to registration also, the two subjects being intimately connected with one another, and demanding equally reform and codification.

The Title "Dental Surgeon."

Thomas Brattle, not being either registered under the Dentists Act, 1876, or a qualified medical practitioner, was

[1] See The King's Coroner, by R. Henslowe Wellington, vol. ii., p. 8.

summoned recently at Greenwich police court for unlawfully using the title "Dental Surgeon." Upon the question whether this title could be used by an unqualified person there was little to be said, the defendant's advocate being content to point out that the employment of the term "dental institute" or "dental surgery" was not treated as an infringement of the law. The defence raised, however, arose out of the use of the term "dental surgeon" by appending it to the defendant's name in the London Telephone Directory. Brattle had been described as a dental surgeon in the last three issues of that volume, and it was stated that he had written on April 26th to the telephone authority to ask that the entry might be altered. It was mentioned that he proposed to have himself described hereafter as "Incorp. Dent. Soc.," being a member of a body known as the Incorporated Society of Dental Operators. The question whether such a description could legally be objected to was not discussed. As, however, the British Dental Association had not communicated with the defendant until after April 26th and the offence was charged in the summons as having been committed on May 21st, the point was taken that the defendant, having then done his best to get the description in the directory altered, could not be convicted in respect of it. It was not questioned that the correction that he asked for on April 26th could not be made before the next half-yearly issue of the directory. The magistrate, Mr. Symmons, observed with regard to this that the defendant had not complained to the telephone authority that he had been rendered liable to penalties by the description applied to him, but had only asked for it to be altered, and he also pointed out that even if the defence suggested prevailed proceedings might be taken in respect of a date earlier than April 26th, and a summons was accordingly applied for and granted charging the use of the title on April 24th. A fine of £3 with 3 guineas costs was inflicted for the offence alleged to have been committed on May 21st, the magistrate being willing to state a case in order that the point referred to above might be considered by the High Court if the defendant so desired.

An American Decision Affecting the Sale of Milk.

The Court of Appeals of the District of Columbia recently affirmed the conviction of a milk dealer named Dade charged in the police court of the district with selling, in violation of the Pure Food and Drugs Act, milk which was found to contain cowdung. The evidence consisted of expert testimony showing the presence of bacilli coli and streptococci. Section 7 of the Act under which proceedings were taken provides that "for the purposes of this Act an article shall be deemed to be adulterated in the case of food" under certain specified conditions, including "Sixth. If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter." The information which related to milk purchased from one of the defendant's wagons charged him with selling adulterated milk "in that it did consist in whole and in part of a filthy, decomposed and putrid animal and vegetable substance." The judgment of the Court of Appeals reviewed the scientific evidence given at the police court, which traced the presence of bacilli coli and streptococci to contamination with fæces, directly through carelessness during the process of milking or indirectly through dust and other similar causes, and which had treated the presence of bacilli coli and streptococci together in large numbers and in the circumstances detailed before the court as "strongly conclusive" of direct fæcal contamination. One of the arguments for the appellant had been based upon the impossibility of securing a milk-supply wholly free from bacteria consistently with the carrying on of the trade in milk at a commercial profit. This consideration, the court declared, did not affect the conviction before it, as the contamination proved had been so great as to bring the case within the statute "beyond the domain of speculation," the foreign matter proved to be in the milk being capable of elimination by the adoption of cleanly methods. The dividing line between pure and impure or adulterated food was declared to be in each instance a question of fact, allowance being made for the alleged necessary presence of bacteria which might or might not be harmless.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House. Total up to date, about £38,000.

	£	s.	d.
St. Columba's Church of Scotland, Pont-street	280	0	0
St. Mark's, North Audley-street	247	0	0
St. Paul's, Knightsbridge	205	0	0
St. Jude's, South Kensington	156	0	0
St. Peter's, Vere-street	132	0	0
Bickley Parish Church	122	0	0
St. John's, Paddington	101	0	0
Rosslyn Hill Unitarian Church, Hampstead	100	0	0
Penge Parish Church	95	0	0
St. Michael's, Paddington	85	0	0
St. Bartholomew with St. Matthew, Sydenham	85	0	0
St. Paul's, Portman-square	85	0	0
Union Chapel, Islington	71	0	0
St. James's, Paddington	70	0	0
Christ Church, Chislehurst	70	0	0
Hampstead Parish Church	62	0	0
St. Mark's, South Marylebone	58	0	0
Stoke Newington Parish Church	53	0	0
St. Andrew's, Wells-street	52	0	0
St. Luke's, Westbourne Park	48	0	0
Lewisham Parish Church	46	0	0
St. George's, Perry Hill	45	0	0
Wellington Barracks Chapel...	44	0	0
Christ Church, Hampstead	43	0	0
St. Barnabas', Pimlico...	41	0	0
Dutch Church, Austin Friars	41	0	0
Weybridge Parish Church	38	0	0
St. Luke's, Battersea	38	0	0
St. James's, West Hampstead	37	0	0
St. Cuthbert's, West Hampstead	34	0	0
Highgate Presbyterian Church	33	0	0
Hillingdon Parish Church	32	0	0
Orpington Churches	30	0	0
Lord Feversham...	30	0	0
St. Mary, Graham-street	30	0	0
St. Michael's, Betchworth	29	0	0
All Saints, St. John's Wood	29	0	0
St. Paul, Camden-square	28	0	0
St. Stephen's, Battersea	27	0	0
Walton-on-the-Hill Parish Church	26	0	0
Old Malden Parish Church	26	0	0
St. Mary, West Kensington	26	0	0
Highbury Quadrant Congregational Church	25	0	0
St. Martin's-in-the Fields	25	0	0
St. German's, Blackheath	25	0	0
Christ Church, Westminster	25	0	0
Gordon-square Catholic Apostolic Church	25	0	0
St. Philip, Sydenham	24	0	0
St. Saviour's, Brixton...	24	0	0
Bromley, Kent, Wesleyan Church	24	0	0
St. John's, Hoxton	23	0	0
St. Alban's, Acton	23	0	0
Holy Redeemer, Chelsea	22	0	0
St. Augustine's, Highbury	21	0	0
Paddington Congregational Church	20	0	0
St. Andrew's, Stockwell	20	0	0
St. Alban's, Holborn	20	0	0
Merton Parish Church	20	0	0
Christ Church, North Finchley	20	0	0

THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (1913).

SECTION OF GENERAL PATHOLOGY.

THE President of this section is Professor Shattock. The section will meet in the drawing office, Royal College of Science.

The first discussion, jointly with the Section of Anatomy, is on the Excitatory and Connecting Muscular System of the Heart. The anatomical side will be taken by Professor His, Dr. Josué will speak on localisation of function, and Dr. T. Lewis and Dr. Ivy Mackenzie will also act as reporters. The subject has been deeply studied during the last few years, and will be sure to arouse much interest.

The Pathology of Fats and Lipoids is another subject on which much work has been done recently. Dr. Iver Bang, of Lund, and Dr. Sigmund Fränkel are introducing it. Their views are well known to be divergent.

The third is the Grafting of Normal Tissues, reporters Professor Borst and Dr. Burrows; the fourth the Pathology of Shock, introduced by Dr. Crile and Professor Yandell Henderson; and the last the Effect of Radio-active Substances on the Tissues. This will be opened by Dr. Hertwig and Dr. Lazarus-Barlow.

Among the contributors of independent papers are Professor Aschoff, Professor Adami, Professor Warthin, Dr. Charles

Singer, Professor Brodie, and Professor Mackenzie, and among the subjects so treated are Hyperblastosis, Tetany, Gastric Ulcer, the Influence of Asphyxia on the Kidney, and the Rigidity of Calcified Arteries.

Information can be obtained from Dr. Leonard Dudgeon (acting secretary), St. Thomas's Hospital.

A SURGICAL EXCURSION.

FOR some little time several of the sections of the Royal Society of Medicine have held meetings in some of the provincial centres, but the Section of Surgery had never met out of London until a few days ago, when, in response to an invitation from the surgeons of Birmingham, it held one of its meetings in the General Hospital, Birmingham.

Some 15 or 20 members of the section responded to the invitation. In the morning, from 11 until 1 o'clock, operations were performed in the theatres of the Queen's Hospital and of the General Hospital, and in the afternoon several cases were exhibited at the General Hospital. Mr. Gilbert Barling showed a number of cases illustrative of the surgery of the nervous system; these included several in which tumours of the brain had been removed, and in some of them several years had elapsed since the operation. Mr. W. F. Haslam showed a case of multiple papilloma of the rectum, the papillomata extending upwards from the anus nearly to the sigmoid. Mr. G. Heaton showed a case of myxœdema which had been treated by grafts of the thyroid placed in the anterior abdominal wall, between the peritoneum and the muscles and also amongst the muscles; he also exhibited a case in which he had removed a mass of tuberculous glands in the small omentum that had caused jaundice by pressing on the common bile duct. Mr. A. Lucas showed a hydronephrosis caused by the pressure from an abnormal renal artery. Professor J. T. J. Morrison showed a patient on whom he had performed an extensive Estlander operation for empyema, and one on whom he had operated for gall-stones under spinal anæsthesia. Mr. W. Billington demonstrated a striking case in which a large renal calculus was easily palpable through the abdominal wall, and another in which an abdominal tumour was present, probably an enlarged gall-bladder. Mr. A. W. Nuthall showed several cases, among which may be mentioned one of chronic hypertrophy of the tibia and one of osteitis deformans. Mr. Seymour Barling showed a cystic hygroma of the neck. Mr. E. M. Woodman showed a case of dermoid cyst of the skull, and a case with spontaneous displacement of the ulnar nerve at the elbow, occurring whenever the elbow was flexed.

After an interval for tea, provided in the board room of the hospital, the section met in the lecture theatre, when Mr. R. Lawford Knaggs, of Leeds, read a paper on Retroperitoneal Rupture of the Duodenum. Mr. Jonathan Hutchinson read a paper on the Treatment of Dupuytren's Contraction by an Improved Method, and also a short note on the value of kangaroo tendon for buried sutures. The visitors were then entertained at dinner by the surgical staffs of the Queen's Hospital and the General Hospital, and they returned to London by the last train. Such visits as these cannot but help the surgeons of one part of the country to know and to appreciate the work done in other centres, and it was hoped by all present that this meeting will be followed by many others equally successful.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on June 12th, Sir RICKMAN GODLEE, the President, being in the chair.

The congratulations of the Council were given to Sir W. Arbuthnot Lane on his receipt of a baronetcy on the occasion of His Majesty's birthday.

A report was received from the Board of Examiners in Anatomy and Physiology for the Fellowship, stating that at the recent examination 124 candidates were examined, and of these 49 were approved and 75 rejected.

A report was received from the Court of Examiners respecting candidates found qualified for the Diploma of Fellow; it stated that 57 candidates presented themselves, and 32 of these acquitted themselves satisfactorily, of whom 29 were at present entitled to receive the Diploma, and the Council resolved to issue Diplomas to these.

In accordance with a report from the Board of Examiners in Dental Surgery, it was resolved to issue Diplomas in Dental Surgery to 49 successful candidates.

Mr. William Thorburn, of Manchester, was elected a member of the Court of Examiners.

The thanks of the council were given to Sir Henry Morris for his services as visitor to the examinations of the Egyptian Medical School at Cairo.

A letter was read from Sir Henry Morris reporting the proceedings of the General Medical Council, and the thanks of the Council were given to him for acting as the representative of the College on the General Medical Council.

The SECRETARY reported the receipt of the replica of the portrait of the late Sir Henry Butlin by the Hon. John Collier, presented by Lady Butlin, and he stated that it had been hung in the entrance hall to the Museum. The Council resolved to offer to Lady Butlin their appreciative thanks for the gift.

The PRESIDENT stated that the vacancy on the Board of Examiners in Dental Surgery occasioned by the retirement of Mr. P. Sidney Spokes will be filled at the next ordinary meeting of the Council.

The PRESIDENT reported that a meeting of the Fellows would be held on Thursday, July 3rd, for the election of four Fellows into the Council in the vacancies occasioned by the retirement in rotation of Mr. Edmund Owen and Mr. C. H. Golding-Bird, by the death of Mr. Clinton T. Dent, and by the resignation of Mr. W. Bruce Clarke.

The following examiners were appointed: Elementary Biology: George P. Mudge, Walter G. Ridewood. Anatomy under the Examining Board in England: John Cameron, John E. S. Frazer, Andrew M. Paterson. Physiology under the Examining Board in England: Charles F. Myers-Ward, Ernest H. Starling. Anatomy for the Fellowship: C. H. Fagge, Robert W. Reid, James Sherren, Gordon Taylor. Physiology for the Fellowship: Edmund W. W. Carlier, John S. Edkins, Francis Gotch, Herbert W. Lyle. Midwifery under the Examining Board in England: Henry R. Andrews, W. Blair Bell, George F. Blacker, George D. Robinson. Public Health—Part I.: R. Tanner Hewlett; Part II., Richard D. Sweeting. For the Diploma in Tropical Medicine—Bacteriology: John W. H. Eyre. Diseases of Tropics: Charles W. Daniels.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 9037 births and 4027 deaths were registered during the week ended Saturday, June 14th. The annual rate of mortality in these towns, which had been 13·4, 13·5, and 12·1 per 1000 in the three preceding weeks, further fell to 11·8 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these towns averaged 13·9, against 13·8 per 1000 in London during the same period. Among the several towns the death-rates last week ranged from 2·9 in Gillingham, 3·5 in Enfield, 3·6 in Ilford, 4·6 in Ealing, and 5·6 in Bournemouth and in Smethwick, to 16·4 in Middlesbrough, 16·5 in Dewsbury, 17·4 in West Bromwich, 18·7 in Stoke-on-Trent, 21·2 in Dudley, and 23·9 in Stockton-on-Tees.

The 4027 deaths from all causes were 102 fewer than the number in the preceding week, and included 308 which were referred to the principal epidemic diseases, against 367 and 339 in the two preceding weeks. Of these 308 deaths, 100 resulted from infantile diarrhœal diseases, 83 from measles, 56 from whooping-cough, 32 from diphtheria, 22 from scarlet fever, and 15 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 0·9, against 1·1 and 1·0 per 1000 in the two preceding weeks. The deaths of infants under two years of age attributed to diarrhœa and enteritis, which had been 70, 81, and 105

in the three preceding weeks, were 100 last week, and included 23 in London, 13 in Liverpool, 7 in Preston, 5 in Stoke-on-Trent, 5 in Manchester, and 3 each in Walsall, in Birmingham, and in Stockport. The deaths referred to measles, which had steadily declined from 151 to 97 in the five preceding weeks, further fell to 83 last week, and caused the highest annual death-rates of 1·3 in Stoke-on-Trent and in Salford, 1·7 in Walsall, and 2·0 in Dudley and in Aberdare. The fatal cases of whooping-cough, which had been 67, 91, and 66 in the three preceding weeks, further declined to 56 last week; of this number 13 were registered in London, 5 in Hull, 4 in Birmingham, 3 in Liverpool, and 3 in Leeds. The deaths attributed to diphtheria, which had been 28, 41, and 36 in the three preceding weeks, were 32 last week, and included 7 in London, 3 in Birmingham, and 2 each in Portsmouth, Stoke-on-Trent, Sheffield, and Rhondda. The 22 deaths referred to scarlet fever last week coincided with the average in the four preceding weeks; 5 deaths occurred in London, 2 in Birmingham, 2 in St. Helens, and 2 in Salford. The fatal cases of enteric fever, which had been 11, 14, and 12 in the three preceding weeks, were 15 last week, and included 3 in London, 2 in St. Helens, and 2 in Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had been 1441, 1430, and 1427 at the end of the three preceding weeks, had further declined to 1418 on Saturday last; 186 new cases were admitted during the week, against 193, 177, and 202 in the three preceding weeks. These hospitals also contained on Saturday last 797 cases of diphtheria, 492 of measles, 297 of whooping-cough, and 35 of enteric fever, but not one of small-pox. The 988 deaths from all causes in London were 17 fewer than the number in the previous week, and were equal to an annual death-rate of 11·4 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 255 to 153 in the six preceding weeks, further fell to 122 last week, and were 31 below the number recorded in the corresponding week of last year.

Of the 4027 deaths from all causes in the 96 towns, 146 resulted from various forms of violence, and 337 were the subject of coroners' inquests. The causes of 38, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, and in 70 other smaller towns. Of the 38 uncertified causes of death last week, 15 were registered in Birmingham, 3 in Liverpool, and 2 each in Ipswich, in Leicester, in Sunderland, and in Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1205 births and 617 deaths were registered during the week ended Saturday, June 14th. The annual rate of mortality in these towns, which had been 16·3, 16·7, and 15·9 per 1000 in the three preceding weeks, further declined to 14·2 per 1000 in the week under notice. During the first 11 weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 16·6, against 13·9 per 1000 in the 96 large English towns. Among the several Scotch towns the death-rates last week ranged from 7·3 in Falkirk, 8·9 in Perth, and 9·6 in Coatbridge, to 15·6 in Kirkaldy, 16·0 in Aberdeen, and 29·7 in Hamilton.

The 617 deaths from all causes were 70 fewer than the number in the previous week, and included 67 which were referred to the principal epidemic diseases, against 107 and 94 in the two preceding weeks. Of these 67 deaths, 29 resulted from measles, 23 from whooping-cough, 7 from diphtheria, 6 from infantile diarrhœal diseases, 1 from enteric fever, and 1 from scarlet fever, but not one from small-pox. These 67 deaths from the principal epidemic diseases corresponded to an annual death-rate of 1·5, against 0·9 per 1000 in the 96 large English towns. The deaths attributed to measles, which had been 40, 33, and 36 in the three preceding weeks, declined to 29 last week, and included 19 in Glasgow, 7 in Aberdeen, and 2 in Dundee. The deaths referred to whooping-cough, which had been 30, 40, and 30 in the three preceding weeks, fell to 23 last week; 15 deaths were recorded in Glasgow, 2 in Kirkcaldy, and 2 in Hamilton. The 7 fatal cases of diphtheria coincided with the average in the four preceding weeks, and comprised 4 in Aberdeen and 3 in Glasgow. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 11, 16, and 12 in the three preceding weeks, declined to 6 last week, and included 4 in Dundee. The death from enteric fever occurred in Edinburgh and that from scarlet fever in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 81, 118, and 98 in the three preceding weeks, further declined to 68 in the week under notice; 27 deaths resulted from different forms of violence, against 22 and 21 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,199,180 persons at the middle of this year, 701 births and 426 deaths were registered during the week ended Saturday, June 14th. The annual rate of mortality in these towns, which had been 19·2, 16·6, and 17·1 per 1000 in the three preceding weeks, rose to 18·5 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these Irish towns averaged 19·6 per 1000; in the 96 large English towns the corresponding rate did not exceed 13·9, while in the 16 Scotch towns it was equal to 16·6 per 1000. The annual death-rate last week was equal to 20·8 in Dublin (against 11·4 in London and 15·4 in Glasgow), 17·5 in Belfast, 17·0 in Cork, 15·3 in Londonderry, 12·2 in Limerick, and 19·0 in Waterford, while in the 21 remaining smaller towns the mean death-rate was 18·3 per 1000.

The 426 deaths from all causes were 33 in excess of the number in the previous week, and included 19 which were referred to the principal epidemic diseases, against 13 and 31 in the two preceding weeks. Of these 19 deaths, 7 resulted from infantile diarrhœal diseases, 5 from whooping-cough, 2 from measles, 2 from scarlet fever, 2 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 0·9 per 1000, and coincided with the rate in the 96 large English towns; while in the 16 Scotch towns the death-rate from these diseases reached 1·5 per 1000. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 11, 2, and 10 in the three preceding weeks, were 7 last week, and comprised 3 in Belfast, 2 in Dublin, and 2 in Londonderry. The 5 deaths referred to whooping-cough last week were slightly in excess of the average in the earlier weeks of the quarter, and included 4 in Dublin and 1 in Waterford. The 2 deaths from measles were registered in Belfast and Newry respectively, those from scarlet fever in Dublin and Cork, those from diphtheria in Dublin, and the fatal case of enteric fever in Belfast.

The deaths referred to diseases of the respiratory system, which had been 79, 59, and 62 in the three preceding weeks, rose to 71 in the week under notice. Of the 426 deaths from all causes, 148, or 35 per cent., occurred in public institutions, and 10 resulted from different forms of violence. The causes of 12, or 2·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

VITAL STATISTICS OF LONDON DURING MAY, 1913.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 4·8 per 1000 of the population, estimated at 4,518,191 persons in the middle of the year; in the two preceding months the rates were 4·8 and 4·6 per 1000 respectively. The lowest rates last month were recorded in Paddington, Chelsea, Hampstead, Finsbury, and Camberwell; and the highest rates in Bethnal Green, Deptford, Greenwich, Lewisham, and Woolwich. The prevalence of scarlet fever showed no variation from that recorded in the preceding month; among the several metropolitan boroughs the greatest

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MAY, 1913.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1913.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.†
LONDON	**4,518,191**	—	**797**	**484**	**3**	**40**	**2**	**31**	**284**	**11**	**5**	**1657**	**4·8**	—	**150**	**12**	**25**	**92**	**6**	**85**	**370**	**1·1**	**4486**	**13·6**
West Districts.																								
Paddington	142,210	—	15	13	—	—	—	—	8	—	—	36	3·3	—	2	—	1	2	—	2	7	0·6	120	11·7
Kensington	171,284	—	30	11	—	1	—	—	9	1	—	52	4·0	—	9	1	1	1	1	3	16	1·2	155	12·7
Hammersmith	123,745	—	18	12	—	—	—	—	10	—	—	40	4·2	—	6	—	1	3	—	4	14	1·5	136	14·9
Fulham	157,117	—	30	13	—	4	—	3	10	1	1	62	5·1	—	4	—	—	3	—	5	12	1·0	148	12·9
Chelsea	64,588	—	3	2	—	—	—	1	—	—	—	6	1·2	—	2	—	—	—	—	2	4	0·8	59	12·3
City of Westminster	154,810	—	22	18	—	3	—	—	10	—	—	53	4·5	—	2	—	—	—	1	3	6	0·5	138	13·0
North Districts.																								
St. Marylebone	114,532	—	19	10	—	2	—	—	2	—	—	33	3·8	—	2	—	—	1	1	1	5	0·6	104	12·6
Hampstead	86,346	—	12	8	—	1	—	—	2	—	—	23	3·5	—	1	—	—	1	—	1	3	0·5	62	10·6
St. Pancras	214,330	—	31	27	—	4	—	—	12	—	—	74	4·5	—	1	—	1	7	1	5	15	0·9	204	13·0
Islington	325,585	—	50	46	—	—	—	3	17	2	—	118	4·7	—	12	1	2	15	—	10	40	1·6	330	13·7
Stoke Newington	50,518	—	5	7	—	—	—	—	3	—	—	15	3·9	—	4	—	1	1	—	2	8	2·1	54	14·5
Hackney	223,353	—	46	13	—	4	1	3	10	—	—	77	4·5	—	5	2	—	2	—	2	11	0·6	214	13·0
Central Districts.																								
Holborn	46,949	—	9	2	—	1	—	—	3	—	—	15	4·2	—	1	—	—	1	—	1	3	0·8	60	18·0
Finsbury	84,679	—	9	2	—	—	—	4	3	2	1	21	3·2	—	—	—	—	2	—	5	7	1·1	112	17·8
City of London	17,916	—	2	3	—	—	—	—	—	—	—	5	3·6	—	—	—	—	—	—	—	—	—	21	16·8
East Districts.																								
Shoreditch	109,654	—	7	11	—	1	—	—	11	—	1	31	3·7	—	1	—	—	—	—	1	2	0·2	132	16·5
Bethnal Green	127,824	—	20	16	—	2	—	1	25	—	—	64	6·5	—	5	1	1	2	—	—	9	0·9	138	14·2
Stepney	275,300	—	29	25	2	6	—	3	32	—	1	98	4·6	—	4	—	1	—	2	2	9	0·4	279	13·8
Poplar	160,913	—	29	15	—	1	—	2	16	2	—	65	5·3	—	9	1	2	5	—	3	20	1·6	182	15·2
South Districts.																								
Southwark	188,487	—	29	16	—	—	1	1	10	—	—	57	3·9	—	12	—	1	6	—	5	24	1·7	238	17·2
Bermondsey	124,739	—	29	13	1	3	—	—	5	—	—	51	5·3	—	19	—	1	8	—	6	34	3·6	170	18·
Lambeth	297,139	—	67	27	—	—	—	1	15	1	1	112	4·9	—	10	—	5	11	—	7	33	1·4	326	14·8
Battersea	167,464	—	44	21	—	1	—	3	3	—	—	72	5·6	—	3	1	—	4	—	3	11	0·9	145	12·1
Wandsworth	330,395	—	45	31	—	2	—	5	14	2	—	99	3·9	—	9	1	2	3	—	3	18	0·7	251	10·4
Camberwell	261,805	—	39	20	—	—	—	1	8	—	—	68	3·4	—	7	2	2	3	—	6	20	1·0	246	12·7
Deptford	109,280	—	48	14	—	1	—	—	23	—	—	86	10·3	—	10	1	—	4	—	—	15	1·8	118	14·8
Greenwich	96,015	—	16	22	—	—	—	—	7	—	—	45	6·1	—	5	—	—	2	—	3	10	1·4	99	13·7
Lewisham	168,822	—	57	26	—	3	—	—	7	—	—	93	7·2	—	3	—	2	3	—	—	8	0·6	135	10·8
Woolwich	122,382	—	36	40	—	—	—	—	9	—	—	85	9·1	—	2	1	1	2	—	—	6	0·6	110	12·5
Port of London	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

proportional prevalence of this disease was recorded in Lambeth, Battersea, Deptford, Lewisham, and Woolwich. There were 1414 scarlet fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 1436 and 1353 at the end of the two preceding months; the weekly admissions averaged 184, against 158 and 183 in the two preceding months. Diphtheria was rather more prevalent than it had been in the previous month; the greatest proportional prevalence was recorded in Islington, Deptford, Greenwich, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 803 diphtheria patients at the end of last month, against 901 and 792 at the end of the two preceding months; the weekly admissions averaged 27, against 26 and 22 in the two preceding months. The prevalence of enteric fever showed a slight increase over that recorded in the preceding month; this disease was proportionally most prevalent in Fulham, the City of Westminster, St. Pancras, Hackney, Stepney, and Bermondsey. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 42 and 34 at the end of the two preceding months, had risen again to 41 at the end of last month; the weekly admissions averaged 7, against 7 and 4 in the two preceding months. Erysipelas was proportionally most prevalent in Shoreditch, Bethnal Green, Stepney, Poplar, and Deptford. The 31 cases of puerperal fever notified during the month included 5 in Wandsworth, 4 in Finsbury, and 3 each in Fulham, Islington, Hackney, Stepney, and Battersea. The 11 cases of cerebro-spinal meningitis included 2 each in Islington, Finsbury, Poplar, and Wandsworth; and the 5 cases notified as poliomyelitis belonged respectively to Fulham, Finsbury, Shoreditch, Stepney, and Lambeth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the four weeks ending May 31st the deaths of 4486 London residents were registered, equal to an annual rate of 13·6 per 1000; in the three preceding months the rates had been 19·0, 18·5, and 16·1 per 1000. The death-rates last month ranged from 10·4 in Wandsworth, 10·6 in Hampstead, 10·8 in Lewisham, 11·7 in Paddington, and 12·1 in Battersea, to 16·8 in the City of London, 17·2 in Southwark, 17·8 in Finsbury, 18·0 in Holborn, and 18·2 in Bermondsey. The 4486 deaths from all causes included 370 which were referred to the principal infectious diseases; of these, 150 resulted from measles, 12 from scarlet fever, 25 from diphtheria, 92 from whooping-cough, 6 from enteric fever, and 85 from diarrhœa and enteritis among children under two years of age. No death from any of these diseases was recorded in the City of London; among the several metropolitan boroughs they caused the lowest death-rates in the City of Westminster, Hampstead, Hackney, Shoreditch, and Stepney, and the highest rates in Hammersmith, Islington, Stoke Newington, Poplar, Southwark, Bermondsey, and Deptford. The 150 deaths from measles were 15 below the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal last month in Kensington, Stoke Newington, Poplar, Southwark, Bermondsey, Deptford, and Greenwich. The 12 fatal cases of scarlet fever showed a decline of 10 from the corrected average number, and included 2 in Hackney and 2 in Camberwell. The 25 deaths from diphtheria were 9 fewer than the corrected average; of these, 5 belonged to Lambeth, and 2 each to Islington, Poplar, Wandsworth, Camberwell, and Lewisham. The 92 fatal cases of whooping-cough were 24 below the corrected average number; this disease was proportionally most fatal in Islington, St. Pancras, Poplar, Southwark, Bermondsey, Lambeth, and Deptford. The 6 deaths from enteric fever were slightly below the corrected average, and included 2 in Stepney, and 1 each in Kensington, the City of Westminster, St. Marylebone, and St. Pancras. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Fulham, Chelsea, Islington, Stoke Newington, Finsbury, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases, excluding diarrhœa, was 18·8 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned Deputy Surgeon-Generals have been promoted to the rank of Surgeon-General in His Majesty's Fleet:—William Eames (dated May 11th, 1913) and William Henry Norman (dated June 5th, 1913).

The undermentioned Fleet-Surgeons have been promoted to the rank of Deputy Surgeon-General in His Majesty's Fleet:—Herbert William Gibbs Doyne (dated May 6th, 1913), George Albert Dreaper (dated May 11th, 1913), and Richard Aubrey Fitch (dated June 5th, 1913).

In accordance with the provisions of Order in Council of May 13th, 1901, the undermentioned, formerly a Surgeon in His Majesty's Navy, has been placed on the Emergency List: Arthur Alexander Joseph McNabb (dated June 10th, 1913).

The following appointments have been notified:—Deputy Surgeon-Generals: J. L. Smith, M.V.O., to the Malta Hospital; and H. W. G. Doyne to Chatham Hospital. Fleet-Surgeons: W. Bett, M.V.O., to the *Dreadnought*, and for General Staff duties, on recommissioning; J. A. Moon to the *Pomone;* L. E. Dartnell to the *Africa;* J. A. Keogh to the *Lord Nelson;* and E. S. Miller to the *Warrior*. Staff-Surgeons: G. E. Hamilton to the *Alecto*, temporarily; J. McA. Holmes to the *Warrior*, on recommissioning; J. Stoddart to the *Sapphire;* and L. M. Morris to the *Hermione*, on recommissioning. Surgeons: W. G. Edwards, R. F. Maclachlan, S. H. Vickery, and W. G. Moore-Anderson to the *Victory*; L. C. E. Murphy, D. H. C. Given, and P. B. Egan to the *Pembroke*; H. D. Drennan and S. Bradbury to the *Vivid*, all additional, for disposal; P. F. Minett to the *Lord Nelson* and B. Taylor to the *Dreadnought*, both on recommissioning; and H. F. Briggs to the *Prince of Wales*.

ROYAL ARMY MEDICAL CORPS.

Surgeon-General H. G. Hathaway, Deputy Director of Medical Services to the Eighth (Lucknow) Division, has taken up duty at headquarters, Darjeeling Cantonment.

Brevet-Colonel R. S. F. Henderson has been granted an extension of Indian tour of service for one year.

Lieutenant-Colonel J. Donaldson has been appointed to command the Military Hospital at Jubbulpore Cantonment. Lieutenant-Colonel O. L. Robinson has been granted five months' general leave of absence in India. Lieutenant-Colonel F. R. Newland has been appointed to hold charge of the Military Hospital at Dover. Lieutenant-Colonel T. G. Lavie has been selected for advancement to the increased rate of pay under Article 317 of the Royal Warrant for pay and promotion. Lieutenant-Colonel C. W. R. Healey has arrived home on leave of absence from India.

Major A. E. Master has been appointed to Windsor for duty. Major P. J. Probyn, D.S.O., has been transferred from the Military Hospital at Londonderry to the Northern Command. Major E. Brodribb has embarked for a tour of duty (by exchange) in Malta. Major E. V. Aylen has been granted an extension of Indian tour of service for one year. Major J. D. Alexander has been transferred from the Military Hospital at Darjeeling Cantonment to Calcutta. Major J. P. Silver has taken up duty at the Military Hospital at Cork. Major W. S. Crosthwait has joined the Station Hospital at Ambala Cantonment. Major C. Dalton has been selected for promotion to the rank of Lieutenant-Colonel. Major W. A. Ward has joined the London District for duty. Major H. O. B. Browne-Mason has been appointed to officiate as Deputy Assistant-Director of Medical Services to the Sixth (Poona) Division. Major E. Bennett has been transferred from the Military Hospital at Delhi Cantonment to Kirkee Cantonment. Major A. C. Adderley has joined the Military Hospital at Wynberg. Major H. R. Bateman has been appointed Company Officer at Shorncliffe. Major H. D. Packer has been placed under orders for a tour of service abroad.

Captain H. V. Bagshawe has arrived home on leave of absence from Cairo. Approval has been granted for an exchange on the roster for service abroad between Captain R. E. Humfrey and Captain B. H. V. Dunbar; the former

officer will proceed abroad. The following Captains have been selected to attend the next course for promotion to the rank of Major at the Royal Army Medical College: C. V. B. Stanley, D. S. B. Thomson, R. G. Anderson, T. C. Lucas, W. Byam, P. C. T. Davy, G. R. Painton, G. B. F. Churchill, J. A. Anderson, and C. G. Browne. Captain F. L. Bradish has been granted six months' leave of absence home from India. Captain V. C. Honeybourne has been appointed to the Irish Command on return from Aden. Captain R. J. C. Thompson has arrived home on leave of absence from the Egyptian Army. Captain E. M. O'Neill has been transferred from the Military Hospital at Cork to Youghal. Captain T. W. O. Sexton has been appointed to the Royal Herbert Hospital at Woolwich. Captain E. D. Caddell has been transferred to the Aden Brigade from Karachi. Captain R. H. Nolan has arrived home for duty from Rawal Pindi Cantonment. Captain A. W. Bevis has been appointed to the Irish Command. Captain C. A. T. Conyngham has been appointed Specialist in Dermatology and Venereal Diseases to the Fifth (Mhow) Division of the Southern Army in India. Captain A. C. Vidal has arrived home, tour expired, from the South African Command. Captain W. H. Forsyth has been appointed to the Royal Victoria Hospital at Netley. Captain W. F. M. Loughnan has taken up duty at Aden. Captain C. H. Denyer has been transferred from the Military Hospital at Jubbulpore to Agra Cantonment. Captain H. C. Winkworth has been placed under orders for a tour of service abroad.

Lieutenant A. G. Biggam has been appointed to the Northern Command. Lieutenant J. L. Ritchie has been transferred to the Aldershot Command from the Northern Command. Lieutenant F. S. Tamplin has embarked for a tour of service at Gibraltar. Lieutenant G. O. Chambers has joined the Military Hospital at Cairo on transfer from Lichfield. Lieutenant J. D. Kidd has embarked from the Curragh Camp for a tour of service in India. Lieutenant W. L. E. Fretz has been transferred from the Second (Rawal Pindi) Division to the Third (Lahore) Division for duty at the Military Hospital Ambala Cantonment. The following Lieutenants have been placed under orders to proceed abroad during the coming trooping season: J. H. M. Frobisher, W. Stevenson, J. L. Ritchie, D. T. Richardson, O. W. J. Wynne, and C. M. Ingoldby. Lieutenant W. B. Laird has been transferred from London to Caterham for duty at the Military Hospital and Guards Depôt. Lieutenant C. D. K. Seaver has left the Curragh Camp for a tour of service at Rawal Pindi Cantonment. Lieutenant J. L. Huggan has been appointed to the London District. Lieutenant S. J. Higgins has been transferred from Fethard to Fermoy for duty at the Military Hospital.

INDIAN MEDICAL SERVICE.

The King has approved of the promotion of Lieutenant-Colonel Patrick Hehir to Colonel (dated March 25th, 1912).

The King has approved of the retirement of the undermentioned officers: Lieutenant-Colonel Kanta Prasad (dated June 3rd, 1913) and Lieutenant-Colonel Henry Charles Leffler Arnim (dated June 13th, 1913).

Surgeon-General Sir C. Pardey Lukis, K.C.S.I., has been selected for appointment as Honorary Surgeon to His Majesty the King, in succession to Surgeon-General G. Bidie, deceased.

Colonel T. Grainger, C.B., has been appointed to officiate as Deputy Director of Medical Services to the Second Rawal Pindi Division, in succession to Surgeon-General A. M. Crofts, C.I.E., transferred to Simla.

Lieutenant-Colonel J. J. Bourke has arrived home on leave of absence from India. Lieutenant-Colonel W. Drake-Brockman has been appointed Residency Surgeon at Mewar. Lieutenant-Colonel C. R. Green, professor of midwifery at the Government Medical College, Calcutta, has been granted eight months' furlough and general leave of absence home. Lieutenant-Colonel W. Vost has been selected for advancement to be a Civil Surgeon of the First Class, in succession to Lieutenant-Colonel J. J. Pratt, retired.

Major H. W. Illius has been transferred from Budaun to Rae Bareli and appointed to officiate as Civil Surgeon. Major A. M. Fleming has been appointed to officiate as a Civil Surgeon of the First Class, in succession to Major W. H. Kenrick on deputation on Malaria Survey duty in the Central Provinces. Major W. R. Battye has arrived home on leave of absence from India. Major R. H. Price has taken up duty as Specialist in Advanced Operative Surgery. Major J. M. Goodbody has been granted six months' leave of absence. Major J. H. Hugo, D.S.O., has been granted three months' extension of leave of absence home from India.

Captain R. A. Lloyd has been transferred from the Military Department of the Government of India for civil employment in the Central Provinces. Captain N. M. Wilson, civil surgeon at Muzaffargarh, has been transferred to Dera Ghazi Khan as Civil Surgeon, in succession to Captain R. T. Wells. Captain M. R. C. MacWatters has been transferred for civil employment in the United Provinces of Agra and Oudh. Captain H. H. Robson has been appointed a Specialist in Mental Science. Captain A. F. Babonau has been transferred from Ambala to Jhelum and appointed Plague Medical Officer. Captain C. H. Reinhold has joined the Civil Medical Department of the United Provinces of Agra and Oudh. Captain A. G. Cooper has been appointed Specialist in Electrical Science and Radiography. Captain N. S. Simpson has been appointed Plague Medical Officer in the Benares Circle, in succession to Captain J. S. O'Neill. Captain F. P. Wernicke has been appointed to officiate as Civil Surgeon at Pachmarhi. Captain W. J. Powell has taken up duty as Superintendent of the Central Jail at Jubbulpore. Captain W. J. Frazer, civil surgeon at Chhindwara, has been placed on special deputation duty at Delhi in connexion with the study of malaria fever. Captain J. Tyrell has been appointed Agency Surgeon at Bundelkhand. Captain C. F. Marr has been granted an extension of leave of absence.

Lieutenant T. A. Hughes has been appointed a Specialist in the Prevention of Disease. Lieutenant J. Scott has been appointed to officiate as Medical Officer in charge of the 29th Regiment of Lancers.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned to be Lieutenants (on probation) (dated May 27th, 1913): Cadet Sergeant Kenneth Alexander Macdonald Tomory, from the Edinburgh University Contingent, Officers Training Corps. Cadet Corporal John Taylor, from the St. Andrews University Contingent, Officers Training Corps. Henry Paterson Crow, late Cadet, Glasgow University Contigent, Officers Training Corps. David Mackie, late Cadet, Glasgow University Contingent, Officers Training Corps.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Southern General Hospital, Royal Army Medical Corps: Seymour Gilbert Barling (late Major, 2nd South Midland Field Ambulance, Royal Army Medical Corps) to be Major, whose services will be available on mobilisation (dated May 9th, 1913).

North Midland Mounted Brigade Field Ambulance, Royal Army Medical Corps: Thomas George Buchanan to be Lieutenant (dated April 28th, 1913).

4th London Field Ambulance, Royal Army Medical Corps: Captain Arthur E. Jerman to be Major (dated June 18th, 1913).

2nd West Riding Field Ambulance, Royal Army Medical Corps: Lieutenant Francis G. Dobson to be Captain (dated May 13th, 1913).

Attached to Units other than Medical Units.—Lieutenant Harry B. Sproat to be Captain (dated July 27th, 1912). The undermentioned officers resign their commissions: Lieutenant-Colonel William Mearns, who is granted permission to retain his rank and to wear the prescribed uniform (dated June 18th, 1913); Captain John Bradford, who is granted permission to retain his rank and to wear the prescribed uniform (dated June 14th, 1913); and Lieutenant Henry W. M. Strover, and Lieutenant Allan D. Low (dated June 18th, 1913.)

For attachment to Units other than Medical Units.—James Leslie Wilson to be Lieutenant (dated May 5th, 1913) and William Emerson Lee to be Lieutenant (dated June 18th, 1913).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

An interesting and important joint communication appears in the June issue of the *Journal of the Royal Army Medical Corps* by Mr. Hartley Durrant, F.E.S., and Lieutenant-Colonel W. W. O. Beveridge, D.S.O., entitled A Preliminary Report on the Temperature Reached in Army Biscuits During

Baking, Especially with Reference to the Destruction of the Imported Flour-moth, Ephestia Kühniella, Zeller. It having been found that ration biscuits exported to the colonies have become after a time unfit for consumption, owing to the ravages of certain moths and beetles, an inquiry was undertaken to ascertain (1) how and when infestation took place, and (2) how such infestation could be avoided or minimised. A large number of experiments were made, and the authors' conclusions are that infestation takes place after baking, during cooling, and prior to the tins being soldered; and, although at present unable to state definitely the degree of heat necessary to kill the ova of the insects, the investigators think it very unlikely that the ova are able to withstand such temperatures as are reached and maintained during the process of baking. Until the exact temperature destructive to the ova is discovered the suggestion is offered that the temperature conditions during cooling should be rendered as uncomfortable as possible for the moths by introducing screened, cooled air which should be continuously withdrawn. Especial attention should also be paid to prevent access of the moth to places where the biscuits are cooled or packed. The report is illustrated by reproductions of photographs of the insects causing the mischief and by pictures of the apparatus used in making the experiments. The first part of Major S. L. Cummins's Parkes memorial prize essay on the Causation and Prevention of Enteric Fever in Military Service (with Special Reference to the Importance of Carriers) also finds a place in this issue. The author believes that with regard to the causation of enteric fever "we may ..... conclude—

1. That owing to service exigencies, especially the aggregation of men in barracks or camps, often in hot climates, the importance of carriers will be greater under army conditions than in civil life. 2. That in war (*a*) the excretion of germs by carriers will tend to be increased; (*b*) the means of transfer of these germs to the healthy will be enormously facilitated; and (*c*) the resistance of the individuals composing the forces will be below normal."

Major J. C. Kennedy contributes A Report on Two Cases of Acute Anterior Poliomyelitis that Occurred in the British Troops Stationed at Pekin in the Latter Half of 1912, possibly the first cases that have appeared in China—"certainly the first noted in the British troops" there.

The Army Council have approved of Colonel Donald J. Mackintosh, M.V.O., assistant director of Medical Services, Lowland Division, being appointed to a seat as a Military Member of the Territorial Force Association for the city of Glasgow.

Correspondence.

"Audi alteram partem."

SIR VICTOR HORSLEY AND MR. McKENNA.

To the Editor of THE LANCET.

SIR,—In a letter appearing in your issue of June 14th Sir Victor Horsley comments on my action as President of the Royal College of Surgeons.

When he heard that the attention of the College had been called to his conduct by the Home Secretary, he wrote to me requesting that copies of all documents which had passed, or might in future pass, between me, or the College, and the Home Secretary, should be forwarded to him. This letter I answered from the College of Surgeons the following day, and on returning to my house found a letter from his solicitor accusing me of the discourtesy of not replying. Sir Victor Horsley's statement that I did not reply until I had received a letter from his solicitor is therefore not in accordance with fact.

His comprehensive demand was one for consideration by the Council, not by me. When complaints are made to the Council with regard to the conduct of Fellows and Members it is not the custom to communicate them to the parties involved unless the Council decide to take the matter up. If any disciplinary procedure is contemplated due notice is given, and ample time is allowed for explanation or defence. This, in my opinion, is the reasonable, fair, and prudent course to pursue. Complaints reach the College from time to time of the conduct of Fellows and Members which no useful purpose would be served by disclosing.

After mature consideration the Council decided that the evidence laid before them was so contradictory that they were not in a position to enter upon the ethical questions involved. They are, therefore, now under no obligation to disclose the precise form of the complaint, but, as a matter of courtesy, they have allowed Sir Victor Horsley access to all documents referring to himself, and have communicated to him the terms of their reply to the Secretary of State.

May I add that Sir Victor Horsley, in numerous letters in the lay press, shows that he is possessed by a fixed idea that I personally have been conspiring against him. I trust my professional brethren will believe that nothing is, or ever has been, further from my inclination or the fact.

I am, Sir, yours faithfully,

RICKMAN J. GODLEE, President.

Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., June 17th, 1913.

WHEN TO OPERATE IN APPENDICITIS.

To the Editor of THE LANCET.

SIR,—Will you be so kind as to allow me to make some reply to the letters in THE LANCET which were called forth by the publication of the abstract of my paper upon appendicitis?

In describing himself as a strong supporter of "immediate operation" (March 22nd, p. 851) Mr. Clayton-Greene gives the figures of the acute cases in St. Mary's Hospital in 1902, when it was the rule to wait and watch. There were 73 of them, with a mortality of 28·5 per cent., and in 1903 there were 77, with a mortality of 30·5 per cent. But in 1912, when a "no wait" policy was generally adopted, 136 cases were operated on, with a mortality of 5·9 per cent. There was, he tells us, no "picking" of cases. I am not a great believer in statistics, especially when "prepared" by a surgeon himself to give proof of the excellence of his own particular methods, but I cordially accept these collective figures, and I venture to congratulate Mr. Clayton-Greene and his medical, as well as his surgical, colleagues upon them. They give eloquent testimony to the soundness of the principle that as soon as it is clear that the appendix is inflamed it should be removed.

The letter from Mr. Battle (May 3rd, p. 1266) is such as one would expect from so practical a surgeon, but there are two remarks in it which jar somewhat—he says that if something or other is not done, "it may be thought that Mr. Owen has made a new discovery" in urging immediate operation. Such an idea certainly never passed through my mind, and I would be sorry if anything in my paper seemed to suggest it. I said nothing new; nothing which has not been said over and over again by other surgeons.

My reason for writing the paper was that I thought the time had arrived when a gathering of physicians, surgeons, and general practitioners might well be arranged in which a sort of *credo* could be agreed on with regard to the greatest safety in the greatest number of cases of appendicitis being in very early operation, and I thought that Lettsom's old Society would be a suitable place for it. And, judging from letters which have since been sent me, this general expression of opinion has already had the direct effect of clearing away doubt and delay, and bringing in a happier state of affairs in more than one instance. But even yet professional opinion is not solid on the advisability of early operation in appendicitis, so that some more hammering at the subject will be useful.

The second matter to which I wish to refer is this—Mr. Battle says: "We cannot expect everyone to possess the knowledge which will enable him to differentiate the more dangerous types from those which will run a mild course." Then, does Mr. Battle possess this knowledge? *I* certainly do not, and I do not know anyone who, in my opinion, can rightly make such a claim. The future of every case of appendicitis which is allowed to go on without operation rests upon the knees of the gods; one may *guess*, but one cannot *know*. I am quite ready to grant that Mr. Battle possesses the gift of healing, but I demur if he claims also that of prophecy. The two gifts, we are told, are not usually bestowed upon the same person.

Mr. Frank Kidd (May 10th, p. 1342) admits that he cannot tell which cases are going to fulminate and which to quiet down; he wishes that he could. So does almost every other surgeon. But as soon as a case of appendicitis is admitted into his wards it is put up in the sitting position, starved, and watched, and an hourly chart of temperature, pulse, and breathing is taken. If at the end of four hours these are all falling and the pain is less, the patient is allowed to settle down into an "interval" case. That is, I take it, the operation is done later. I am going to insist that now and then a case is met with in which pulse, breathing, temperature, and tenderness are all quieting down, and yet the appendicular disease is stealthily advancing. Such are the "surprise" cases. Has not Mr. Kidd met with them? Nothing but immediate operation can render such cases safe. Mr. Kidd says that if the hourly or four-hourly examination presages ill, "an operation is at once performed, and, so far, I have had no reason to doubt from the operative findings that *the peritonitis was spreading.*" (The italics are mine.) But inasmuch as the surgeon can no more guide a case of peritonitis than he can foretell what course it will take, it must surely be safer to remove the inflamed appendix before it has had the chance of setting up a peritonitis.

I am, Sir, yours faithfully,

Upper Berkeley-street, W., June 13th, 1913. EDMUND OWEN.

BREAST FEEDING.

To the Editor of THE LANCET.

SIR,—The leading article and the three original communications which appear in THE LANCET of June 14th on the subject of breast feeding cannot fail to call attention to one of the chief reasons for the premature weaning and artificial feeding of infants. I refer to the many difficulties which beset the path of the best intentioned mothers in their first essays at breast feeding. I know well that many mothers are only too glad to avoid their natural responsibilities and to relegate their duties to the nurse, but on the other hand a very large number of mothers are driven by despair and apparent failure to adopt the same course—a course which, through want of knowledge, is often encouraged by the medical attendant and by the nurse. The practical details which are essential to ensure successful breast feeding are, as Mrs. L. Naish has so forcibly demonstrated, but little understood by the majority of mothers, hence breast feeding does not always prove a success, and the descent to bottle feeding is easy. In spite of the shortcoming of the test-feed, to which Dr. David Forsyth has very properly called attention, it is by means of the "test-feed" that the obvious disadvantages of premature weaning can be best avoided.

It has been the universal experience of the few persons in this country who have consistently availed themselves of the information which the test-feed affords to find that as a means of diagnosis of the causes of indigestion and malnutrition in breast-fed infants it is the most valuable expedient we possess, that its evidence is the most effective argument against premature weaning, and that it affords invaluable data on which to base supplementary feeding. I have had some eight years' experience of the method, and some of the results which I have obtained are truly remarkable. The most interesting cases are those of wasting infants, whose mothers assure me that they have a good supply of milk, and that their infants secure a good amount of milk at each feeding. At the time of the "test-feed" I invariably ask the following question: "Do you think your baby has had a good feed?" Not infrequently the mother says: "Yes, it has had a good feed," when the evidence of the experiment proves beyond question that the amount of milk the baby has secured is quite negligible, possibly less than two teaspoonfuls. Starved babies of this kind show enormous improvement under judicious supplementary feeding. One baby brought a few weeks ago to the Queen's Hospital for Children gained 2 lb. 2 oz. in one week as the result of supplementary feeding after prolonged starvation of this kind. This is the record gain registered at the hospital, but I have seen several of 1½ lb., and a few of 1¾ lb.

I am, Sir, yours faithfully,

June 14th, 1913. ERIC PRITCHARD.

SKIN GRAFTING WITHOUT DRESSINGS.

To the Editor of THE LANCET.

SIR,—It may be of interest to state that about 14 years ago I began to treat all cases of skin-grafting without the application of any dressings, and I feel sure I was not the first in this country to do so.

The first time I adopted this treatment was with the skilful aid of my house surgeon, Mr. J. R. Benson, who is now practising at Bath. We skin-grafted the ulcer that remained after the extensive removal of the left breast. Mr. Benson made a little cage, which we covered with double cyanide gauze. Complete healing at once took place under its protection. Since then I have adopted this mode of procedure with complete success.

I see in your annotation upon this subject in THE LANCET of June 14th that Dr. Wiener, whom you quote, packs suppurating sinuses with iodoform gauze. In an article which I wrote on Surgical Technique in "System of Treatment," edited by Dr. A. Latham and Mr. T. Crisp English (vol. i., p. 77), I drew attention to the fact that much of the iodoform gauze sold in this country is either fraudulent or the gauze does not contain its reputed strength of iodoform. In many cases it was artificially stained to appear yellow, and instead of 10 per cent. or 20 per cent., as its strength was reputed to be, sometimes it was 1 per cent. or even less. I must hasten to add that most of the iodoform gauze made by British manufacturers was accurate in strength and not in any way tampered with. The antiseptic gauzes which we found very seriously at fault were those chiefly imported from abroad and sold in this country. The only way in which I can see we could be protected from this grave state of affairs would be to make these gauzes pharmacopœial preparations.

One other point to which allusion should be made whilst dealing with this subject. The gauzes now being sold are too frequently of an inferior quality. The meshes are too large and too irregular; they should be small and regular. The matter is fully dealt with in the article in the book to which I have alluded.

I am, Sir, yours faithfully,

Harley-street, W., June 13th, 1913. G. LENTHAL CHEATLE.

ST. GEORGE'S HOSPITAL AND THE KING'S FUND.

To the Editor of THE LANCET.

SIR,—At a meeting of the court of governors of St. George's Hospital on Thursday, June 12th, the principal business considered concerned the relations existing between the hospital and King Edward VII.'s Hospital Fund for London. At this meeting we had the advantage of hearing Sir Henry Burdett, who is a member of the committee of that Fund. Sir Henry Burdett, speaking as a governor of the hospital, but under what, from the attitude of his audience, must have been a very lively sense of his responsibility as a member of the King's Fund committee, gave what must be regarded as the common committee view of the question under discussion, as he repudiated any special knowledge or investigation. If this be so, since this account bore so little resemblance to the facts, it can only be assumed that the committee had never had the hospital's case put before it, but only garbled versions which have filtered through subcommittees or the reports of permanent officials. It is not surprising that Sir Henry Burdett's account was confused, as the grounds of complaint against the hospital alleged by the committee have ranged through heterodox bookkeeping, diversions of the hospital's funds to medical school purposes, and too large an expenditure on the bacteriological department, and in the last report the onus is laid on the pathological department and museum. This last complaint will cause searching of heart and much difficulty in explaining the balance sheets of some hospitals whose officials have a place on the committee.

Being challenged as to the authority by which the King's Fund determined, under the guise of a financial control, the amount to be spent by the hospitals on special lines of treatment, Sir Henry Burdett made the surprising but enlightening statement that those that paid the piper should call the tune. He apparently forgot that it is the public and not the committee of the King's Fund which pays the piper, and

that it is precisely on this ground that the hospital has demanded an independent inquiry and has agreed to abide by the results.

It would appear that this independent inquiry is all the more desirable owing to the persistent silence of a large portion of the press. The hospital has submitted its case and its accounts to investigation by Sir Thomas Crosby, the then Lord Mayor, and at the present moment is again submitting its case to Lord Moulton and Sir George Hayter Chubb, at the request of its President, Her Royal Highness Princess Christian.

The King's Fund does not contribute anything to the sum available for the hospitals; indeed, it is a moot point if its establishment has not diminished the total. What it does is to intercept and impound the stream of charity flowing from the public to the hospitals for the very beneficent purposes of economy and regulated control. It is, however, contrary to the original intention of the Fund (and it is certainly surprising) to find the sluice gates which control this fertilising stream, in more than one instance, in the hands of officials of hospitals which largely benefit by the Fund. Anyone acquainted with the devotion with which hospitals are served by their honorary and other officials will know that this is a position which is undesirable.

Sir Henry Burdett has repudiated the idea that any of the dangers of the American Trust are likely to arise in connexion with this King's Fund, but his attitude at the meeting seems to show that the vices of the Trust are at least possible, if not already apparent.—I am, Sir, yours faithfully,

CHARLES SLATER, M.B. Cantab., M.R.C.S. Eng.,
Consulting Bacteriologist to St. George's Hospital.

June 18th, 1913.

THE SIGHT TESTS OF THE BOARD OF TRADE.

To the Editor of THE LANCET.

SIR,—In reply to the letter by Professor C. S. Sherrington in THE LANCET of June 14th I may state that when I was adviser to the Board of Trade I found that the wool test was a bad test, as it rejected many normal-sighted persons and passed many colour-blind; that a properly constructed lantern test was a necessity; and that names must be used in any test for colour-blindness. These statements were brought before the Royal Society, which appointed a committee, which decided that the wool test was an efficient test and that names ought not to be used in a test for colour-blindness. My connexion with the Board of Trade then ceased.

When the present committee was appointed I did not mind its adverse character, there being so many members who were directly associated with the wool test, but it placed it out of my power to convince it, because it would not allow me to demonstrate cases to it.

The knowledge of colour-blindness shown by the committee is exemplified by paragraph 22. This refers to border-line cases of form and colour vision, "in which considerable difficulty has been experienced in determining whether the defects in the vision of the candidate will or will not interfere with his efficient watch keeping. These border-line cases represent much less than 1 per cent. of the candidates examined." This statement is directly opposed to mine. Let us, therefore, compare it with the examination of certificated officers which has taken place during the last two months.

The following is a statement by the Board of Trade:—

> The total number of officers in possession of certificates of competency who were examined in the new tests during the period April 1st–May 31st, 1913, is 409.
>
> *Failed in lantern test only.*—6 certified officers failed in both local and special examinations; 2 failed in local examinations, but special examinations have not yet been held.
>
> *Failed in wool test only.*—None.
>
> *Failed in both lantern and wool tests.*—3 certificated officers failed in both local and special examinations; 1 has failed in the local examination but has not yet been specially examined.
>
> Thus nine certificated officers have failed to pass the new tests; and three having failed at local examinations are awaiting special examinations before a final decision is given.

Now it must be noted that all these men had passed the Board of Trade tests on one or more occasions previously, yet the number of rejections (nearly 3 per cent.) of certificated officers is nearly four times the percentage rejection of all cases, which for the total period since the introduction of the wool test is 0·8 per cent. It will be noticed that eight men failed in the lantern test only and passed in the wool test, that is nearly 2 per cent.

There is probably no scientific man whom I have tried to persuade to let me give him a demonstration more than Professor Sherrington, who, though always a most charming and courteous opponent, has always refused. He evidently held the opinion which was expressed in the Report.

I am, Sir, yours faithfully,

London, June 16th, 1913. F. W. EDRIDGE-GREEN.

PHYLACOGEN TREATMENT OF PUSTULANT ECZEMA.

To the Editor of THE LANCET.

SIR,—The results of phylacogen treatment in the following 4 cases may be of interest to your readers, in reference to Dr. Frederick Porter's note in your issue of June 7th.

1. A girl aged 11. Pustulant eczema of head of three years' duration following on X ray treatment for ringworm. The eczema resisting all ordinary treatment, she was sent to a skin hospital, with no appreciable improvement. On May 16th she was given 1 c.c. mixed phylacogen, no reaction resulting. On May 19th pustules were drying up, and the next day 2 c.c. mixed phylacogen were given without any reaction. On May 22nd 4 c.c. were given, causing a good deal of malaise, and temperature rose to 101·6° F., falling to normal on May 24th, when only three pustules were left. On May 26th 6 c.c. of mixed phylacogen were given; no malaise; temperature rising to 100·4° and falling to normal next day, when the pustules had disappeared, leaving some scaliness of the scalp, which, being treated with thyroid extract internally and boiled oil externally, cleared up in a few days, and the child was discharged cured.

2. A boy aged 8. Pustulant eczema of head of four years' duration, the result of X ray treatment for ringworm. All methods failing, on April 19th 0·5 c.c. mixed phylacogen was given; temperature rose to 101°, and the child had rather a severe rigor; next day the temperature was normal and the boy quite himself. April 21st: 0·5 c.c. was again given; there was no rigor; a slight malaise; temperature rose to 99·8°, falling to normal next day, and the pustules were found to be drier. On April 23rd, 1 c.c. given; temperature rose to 99·4°; no malaise; next day a few fresh pustules appeared. April 26th: pustules were drying up, and 2 c.c. were given; temperature rose to 100·8°: severe rigor; pulse irregular; temperature fell next day to normal; eczema rather worse. April 28th: 4 c.c. given; temperature rose to 103·4; no rigor but some malaise; next day temperature fell to normal, and eczema had improved. April 30th: 4 c.c. given; temperature rose to 100·2°; some malaise; temperature fell next day to normal. May 2nd: 4 c.c. given, no reaction; pustules quite dry, leaving crusts. May 7th: 6 c.c. given; temperature rose to 100°; malaise but no rigor; next day temperature fell to normal and the head was found to be red and inflamed. On May 12th, inflammation having subsided and the scabs having been removed, 4 c.c. were given, causing some malaise and temperature rising to 99·6. May 17th: A few more pustules formed, and as the head was still scaly, thyroid extract was started. May 22nd: 6 c.c. were given; temperature rose to 103 4°, falling next day to normal; malaise but no rigor. May 26th: Several new pustules, and 4 c.c. were given; temperature rose to 100·8°; slight malaise but no rigor; no further inoculations were given, but the thyroid extract was increased to 10 gr. per diem and the scalp treated with boiled oil. The child was discharged cured on June 12th.

3. A girl aged 12. Pustulant eczema of head of nine months' duration following on X ray treatment for ringworm. On April 19th 0·5 c.c. of mixed phylacogen was given; no reaction. April 21st: 1 c.c. was given; no reaction. April 23rd: 2 c.c. were given; no reaction. April 26th: pustules clearing up; 4 c.c. given; child complained of pain at the site of inoculation; temperature rose to 99·4°; no other reaction. April 30th: 8 c.c. given; temperature rose to 99°; slight rigor; much malaise; next evening the child was quite herself. May 2nd: 8 c.c. were again given; temperature rose to 99°; no malaise. Child discharged cured on May 3rd.

4. A girl, aged 12, had pustulant eczema of head of 12 months' duration following on X ray treatment. May 2nd: 1 c.c. of mixed phylacogen; temperature rose to 102°; no rigor or malaise. May 5th: Pustules drying up; 2 c.c. given; temperature rose to 99°; no malaise. May 7th: 4 c.c. given; temperature rose to 101·2°; slight rigor and malaise. May 9th: Pustules quite dried up; 4 c.c. given; temperature rose to 102°; slight malaise. May 12th: 4 c.c. given; temperature rose to 100·2°; no malaise. May 17th: Pustules disappeared; head dry and scaly; thyroid extract commenced. May 22nd: 6 c.c. given; temperature rose to 104°; child very restless, but temperature fell to normal next day. May 26th: 4 c.c. given; temperature rose to 102°; no malaise. May 29th: Child discharged cured.

I also found mixed phylacogen useful in a persistent case of impetigo of face in a child 3 years of age. The dose was increased from 0·5 c.c. to 4 c.c. The first dose caused a slight rigor, which soon passed away, and the temperature rose to 103°. Two further doses of 4 c.c. given on alternate days caused no reaction, and the child was discharged cured.

In another case of a boy of 5 a suppurating scalp wound which had resisted every other treatment was cured with four inoculations of mixed phylacogen. In a case of ulcerative stomatitis in a boy of 6 four inoculations cured him. In two cases of vaginal discharge of gonorrhœal origin in children aged 3 and 5 the gonorrhœal phylacogen was given with no success.—I am, Sir, yours faithfully,

ALICE VOWE JOHNSON, M.D. Brux., F.R.C.S. Irel., D.P.H. Cantab.

Central Hill, Upper Norwood, S.E., June 12th, 1913.

INSANITY AND DIVORCE.

To the Editor of THE LANCET.

SIR,—From Mr. A. Hamilton's letter in THE LANCET of June 14th it appears to me that he is inclined to regard insanity from a mediæval point of view—i.e., he believes that it is due to demoniac possession, and is something quite apart from ordinary bodily disease. The present trend of opinion, however, is to look on insanity as a symptom of disease of the brain. It is true that our knowledge of the pathology of insanity is not at present on a par with our knowledge of that of tuberculosis, but good work is being done, and no one can say when a pathological classification of insanity may be possible, with a consequent advance in the methods of treatment. I do not see why disease of the brain should be pilloried as a ground for divorce more than other diseases of less important organs.—I am, Sir, yours faithfully,

J. BATTY TUKE, M.D. Edin., F.R.C.P. Edin.

New Saughton Hall, Polton, June 16th, 1913.

THE TREATMENT OF TUBERCULOSIS BY "CONTRA-TOXIN."

To the Editor of THE LANCET.

SIR,—For the past four months certain patients suffering from pulmonary tuberculosis have been under treatment at Margaret-street Hospital for Consumptives, and elsewhere in London, by a serum prepared in my laboratory on a principle which differs somewhat from that on which the manufacture of ordinary antitoxic sera and vaccines is based, and I have been urged to place before medical men a short preliminary exposition of the principles on which this serum "contra-toxin" is made

"Contra-toxin" is a mixture of the blood plasma of various animals, mixed in proportions calculated to produce a lytic action on various micro-organisms without producing lysis of the human red corpuscles. In the production of "contra-toxin" advantage is taken of the fact that some reptilian plasmas act as hæmolytic agents while others act as coagulant agents. The practical value of this fact is that when horse's or sheep's blood is sensitised by a combination of both types of reptilian plasma the red corpuscles are no longer capable of being dissolved by distilled water, and at the same time the blood becomes powerfully bacteriolytic.

The name "contra-toxin" is applicable not only to a single serum but to a group of sera prepared in this way, each member of which group has a specific action on a certain group of micro organisms, and while preserving the principle of combination stated above I have varied the component plasmas to some extent, so that sheep's plasma is used as the basis of the serum at present employed in the treatment of tuberculosis, while horse serum is used as the basis for that required in the treatment of protozoal diseases. As a general principle, I have used as the basis of the serum employed in the treatment of any disease the plasma of an animal known to be refractory to that particular disease. When such serum is injected into a human being neither hæmolysis nor anaphylaxis has been known to occur, but when the serum is administered frequently and at very short intervals some slight swelling of the red corpuscles has been observed, but no clinical ill effects have been noticed.

An interesting point in connexion with such sera is that, although high immunity against various micro-organisms can be produced both in human beings and in animals by treatment with the sera, the blood of these immunised human beings or animals cannot produce immunity in other human beings or animals, nor has it any curative effects on those suffering from the same disease. This fact I was able to prove by experiments on animals at Camps Bay. At Camps Bay, too, I carried out experiments on animals which had been inoculated with trypanosomes. I was able, by the use of a special serum prepared on the principle which I have described, to dissolve the trypanosomes circulating in the blood of inoculated animals. This lysis of trypanosomes was produced in some cases within 24 hours and no injury was done to the affected animals. I found, however, in the blood stream evidence of a new body which I believe to have been derived from the dissolved protozoa, and to which I have given the name "protosoma." I have chosen this generic term, as I have discovered similar substances in the blood after the dissolution of other protozoa.

It is only after the trial of many hundreds of experimental combinations that I have arrived at the proportions of reptilian and warm-blooded plasmas necessary to produce a serum bacteriolytic and yet not hæmolytic, and it must be remembered that a serum not made accurately according to formula may produce unpleasant effects in the patient as the result of hæmolysis more or less severe, but always severe enough to give rise to the most disagreeable clinical manifestations. The treatment of pulmonary tuberculosis is in other hands than mine, and until a preliminary report is ready for publication I can say no more at present than that the results of the treatment are most hopeful and encouraging. I am, Sir, yours faithfully,

May 28th, 1913. FREDERICK MEHNARTO, M.D. Heidelberg.

THE SIGNING OF CERTIFICATES.

To the Editor of THE LANCET.

SIR,—In reference to your leading article in THE LANCET of June 7th on the sanctity of medical certificates, I should like your opinion on the following. A certain Approved Society under the National Insurance Act issues a form to its members which must be filled up when claiming sick-pay. Amongst the questions are these:—

Wife's full name.
Your occupation.
Name and address of employer.
Are you wholly dependent for your livelihood on such occupation?
Does your total income exceed £160 per annum?

At the foot of this is the form for the medical certificate to be filled up by the doctor, which reads:—

I certify that the above statements are true; that the claim is *bond-fide*, &c.

Has a society any right to expect a medical man to put his signature to such a certificate and should he sign it? For my own part I always draw my pen through the first eight words. I am, Sir, yours faithfully,

June 12th, 1913. BETA.

*** The society has no right to expect the medical man to certify what he cannot know, and our correspondent's procedure is right.—ED. L.

RABIES IN SAN FRANCISCO.—It is mentioned in the annual report of the British Consul at San Francisco that 20 cases of rabies were reported in that city, all in the month of February. Immediate steps were taken to prevent the spread of the disease, and it disappeared. This is said to be the first time that cases of rabies have occurred in sufficient numbers to warrant the adoption of special precautions.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 1697.*)

XIII.—ABERDEEN: THE QUESTION OF A STATE MEDICAL SERVICE.

AT Aberdeen I was introduced in a marked manner to the fact that a large section of the medical profession might possibly prefer a State Medical Service to the present scheme of private and competitive practices. I had a long interview with Dr. Matthew Hay on this subject, as it is well known that in certain circumstances it was contemplated to run a whole-time service scheme in Aberdeen. I inquired from Dr. Matthew Hay the details of the proposed organisation had the working of medical benefits under the National Insurance Act broken down, and I give them at some length. Much of what follows has, of course, no particular application to Aberdeen. Though it chanced that the subject of a State Medical Service was more closely discussed with me at Aberdeen than elsewhere, all the advantages and disadvantages of such a scheme must be weighed in relation to medical practice generally. Well as the National Insurance Act is working in some places, it is not giving equal satisfaction in others. Amendments will certainly be pressed upon the Government, who may not be able to meet the demands made, and wherever the medical administration of the Act breaks down the question of a National Medical Service is bound to arise. It will be convenient, therefore, to set out simply the *pros* and *cons* for such a service, as they struck me after my interview with Dr. Matthew Hay, the medical officer of health of Aberdeen.

In answer to my questions Dr. Matthew Hay pointed out that every day rendered the institution of such a service less likely, for vested interests were being created by the Insurance Act which it would be very difficult to remove. However, he felt profoundly convinced of the superior attractions of a public service. There were features in the Act, due to excessive contract practice, that might lower the character of the science of medicine and of the medical practitioner; whereas in the civil service the standard of honour had always been well maintained. The medical profession thoroughly appreciated the advantages of civil service, as he had good personal reasons for knowing, while all the whole-time appointments, such as that of medical officer of health, were eagerly sought after. Yet from the point of view of remuneration the prospects were not brilliant. There were posts at £800 a year, but the majority were at a lower figure. In private practice much higher incomes were obtained. But after a certain modicum of comfort had been secured money was not, and ought not to be, the chief object. On the contrary, real scientific work was much easier when the money question had been settled once and for all. This was the case with the civil servant. His old age would be provided for by a pension, and for the present he knew exactly what he had to receive and what he could spend. But the practitioner competing against other practitioners had no such quietude of mind. Thus the public service he had dreamt about meant men employed by Government, paid regular but rising salaries, and entitled to a pension. He considered such a service to have many advantages, though he was certainly not unaware of the risks to the development of the scientific side of medicine which would follow upon the general adoption of any such scheme.

However, this is how the national service scheme would appear to work. Towns should be divided into districts of 20,000 to 50,000 inhabitants, varying in number according to their economic conditions. From the scientific point of view, the most suggestive part of this scheme is the proposed abolition of the practitioner's private surgery. That a practitioner should receive patients in his private dwelling house is, in the opinion of those advocating a National Medical Service, like the handicraftsman who, working in his cottage, strives to compete against the factory, modern machinery, and steam power. To be in keeping with modern progress home work, they say, must be abolished, and great factories or mills established where labour can be subdivided and collectively organised. The medical profession can no more escape this evolution than the working classes. Therefore what might be described as a medical works or factory should be established in each of the economic districts or centres. At this "factory," which would really be a coöperative clinic, the State doctors would assemble and work together instead of competing against each other. The public would have free choice of any of these doctors, but none of them would reap any personal advantage by encouraging malingering or pandering to his patient. On the other hand, as there would be nothing to gain by increasing the duration of illness, it would be to the interest of the medical staff to cure the patients as quickly as possible. Therefore each practitioner would gladly avail himself of the advice of his colleagues working close at hand in the same building, and equally anxious to reduce the prevalence of disease.

The Public Clinic versus the Private Surgery.

Dr. Matthew Hay outlined the advantages of instituting the public clinic as follows. As the area attached to each clinic must be small, there would be no need for motor cars, and many more patients could be seen in a short time. Those patients who wanted to consult a medical man living outside their district would have to pay for him. Each practitioner could have his own consulting-rooms at the clinic, but would share with his colleagues the laboratory for the examination of sputum, of urine, &c., where a trained attendant would be at the disposal of all the staff. There would also be an X ray department and every kind of apparatus for the best methods of clinical investigations. Further, a small library would contain the most up-to-date books. Specialists would be attached to several clinics, visiting each once or twice a week. The medical staff would do all their work at their clinic, and their homes would become once more private dwellings. Grouped together, all necessity of competition and rivalry removed, the panel doctors could then not only help and advise each other in their work, but they might relieve each other for night work and for holidays. To-day, to maintain his popularity a practitioner must not discourage night visits; but where competition is abolished medical men will no longer depend on doing what patients have no right to demand, and thus too often neglect their homes and their studies.

The clinic represents in this scheme the unit of the national service. Here the juniors would work at the lowest salaries. But no junior, under existing systems and outside of a model hospital, can have such opportunities. For a surgery in his private house he could never afford the necessary apparatus. No private practitioner can rival a State clinic. The bacteriological laboratories, the X ray department, the electric apparatus, the great variety of extremely expensive instruments, all represent to medical practice what the steam engine and powerful machinery represent to the old handicraftsman and home worker. At present the practitioner in the equipment of his private surgery escapes inspection; the tools of a carpenter or a joiner are better controlled by his employer. The practitioner has a stethoscope, but who knows whether it is a good one. The instruments to trace pulsations or for blood measurements are expensive, and the young practitioner cannot afford to buy them. Capital is wanted for the machinery of medicine as for the machinery of a cotton mill; and when the public is educated enough to appreciate this fact it will fight shy of the poorly equipped surgery of the private practitioner. Chemical and bacteriological research is the basis of modern medicine, and with the State clinic there would be the State bacteriological and chemical laboratories. Routine could be combined with research work. There would be a few central establishments for research work alone, where picked men from the local clinics might be employed at much higher salaries. A central bureau would collect information from all parts and make known any new occurrence or discovery. There would be a hierarchy but a united service, and the central institutions could send out drafts to various districts when some special problem or emergency arose. The unit or the local clinic would be in close connexion with central institutions or special hospitals for a second opinion or some particularly difficult form of treatment. Here could be organised the finest medical service in the world, surpassing far anything that private enterprise could attempt. Perhaps high salaries might be paid to the staff of the

central institution. There might be something equivalent to bishops or to generals in the service, but all would be under the State just as to-day the medical officers of health are under the Local Government Board. The staff of the clinics would have general duties and become a part of the public health service. There might be a certain rivalry between districts, but that would be to the interest of all. Doctors might be tempted to attend people who had not even sent for them, so great would be their desire to find out cases, and by checking the mischief before it had done much harm improve the health of their district. All this makes for the greater prosperity of the nation. Then the inefficient would be sent away as failures are quickly driven out of the Civil Service. Of course, the weakest part of such a service would be in rural districts. It would be scarcely possible to establish a clinic in a centre which had less than five or six practitioners. Rural populations would have to do what they do now—go to the nearest town.

Such, roughly, is Dr. Matthew Hay's scheme, and it rests on a solid economic basis—the economic law that has revolutionised nearly all the productive industries: associated labour and the necessary capital to procure the most modern machinery—medical men coöperating together as members of the Civil Service in a clinic with laboratories, library, and all the most expensive and perfect apparatus. But perhaps, like the introduction of new machinery, it might throw many out of employment, and it is no consolation to the individual who is starving for want of work to tell him that in the long run these things will right themselves. However, Dr. Matthew Hay's beautiful dream is still so far from realisation that the consideration of its after-effects may be safely deferred.

Drugs and the Aberdeen Poor.

Only two active practitioners at Aberdeen, I was informed, are not on the panel; at any rate, 61 practitioners are on the panel. It cannot be said, therefore, that any general resistance against the Act has been attempted. The last census set down the population of the borough of Aberdeen at 163,895 persons. Of these, 51,400 were known to be insured at the end of March, 1913, and the total when the final lists are obtained will probably amount to 55,000. Of these, some 13,000 were insured in Friendly Societies or clubs, and they rarely paid more than 3*s.* a year for medical attendance and medicine. There are also some juveniles who were attended for half this sum. To-day the local Medical Committee is opposed to capitation fees for children. As about a third of the population is now receiving more medical attendance, more medicine, and more sick allowances than it ever received before, those whose position is thus improved should be better able to pay for the medical treatment of their dependents. It is true that the poor were always able to obtain a great deal of gratuitous medical advice, but they had to pay for whatever medicine they needed, or, in the alternative, to obtain credit and make bad debts. Now in their character of insured persons many of these apply to their panel doctor, not so much for his advice, as because they are anxious to obtain free medicine. This may injure the trade in patent medicines; that this would be the case had already been expressed to me at Dumfries, and the Chancellor foresaw the situation in his Budget Speech (April, 1913), when he said: "There is a substantial drop in medicine labels. It is due to the fact that the sale of patent medicines fell off largely and quite suddenly on account of the Insurance Act." The decline in self-drugging is all to the good, but the waste and foolishness that seem to have superseded self-drugging are almost as deplorable. The poor may argue that there is no need to pay for patent medicine when the panel doctor will give a prescription that will be made up by the panel chemist free of charge. Nor will the chemist be asked for medicine over the counter, as in that case the patient would have to buy the drug. The patient must first go to his panel doctor and get the prescription. Now this may be of benefit to the general health of the community, as the patient is more likely to get the medicine he really needs, but it looks as if he was also going to get a great deal of medicine which he does not need,

The recognition of disease in its early stage, when cure is more readily effected, has always been the desire of all medical men and sanitarians. Anything that will obviate the tragedy of people applying to medical men for help when the condition has become serious or hopeless instead of when it is curable must make for good. Many people fear to consult a doctor, for he may discover cancer or heart disease, and the patient does not want to know about such things. He much prefers to explain to the druggist that he had slight palpitation of the heart, and to ask for something that would reduce these symptoms. The Pharmaceutical Society has been strictly opposed to this kind of thing, but the amount of counter diagnosis and prescribing before the passage of the Act was nevertheless considerable. But now, as the insured person can get the medicine for nothing, he is more likely to venture on seeing his panel doctor.

Prevention of Tuberculosis and the Act.

A pavilion at the Aberdeen Fever Hospital has been reconstructed so as to receive cases of tuberculosis among the insured. There are shelters, wards for advanced cases, and separate wards for hopeless patients. No infection from the neighbouring fever hospital has occurred. At the tuberculosis pavilion the public is familiarised with the outdoor treatment, and this is an impressive lesson, and indeed it is said to have had its influence upon the routine of the fever hospital. A sanatorium is to be established in the country, and every attempt will be made to get early cases. The difficulties here, as every practitioner knows, are great. A patient may feel a little out of sorts, but this is not really a sufficient reason for leaving off work and receiving medical benefit. His medical adviser, on the other hand, does not venture to insist, for, after all, he is not quite sure. To-day, however, with the Act he can tell the patient it would be well for him to leave off work during a couple of months or so. But even then the 10*s.* which the Act allows is not much compensation for losing a wage of 25*s.* or 30*s.* a week. Many cases that would benefit most from sanatorium treatment are not treated, especially when the patient is an adult in full work. How can he be compelled to leave when he feels quite fit for work? It might make him lose his employment permanently. His employer might be alarmed and think he ought not to take a man with tuberculosis back into his works. All this has been fully considered for the past two or three years, and the anticipated panic of the public has never taken place. The amount of public attention to health problems, as well as the amount of medical attendance to individual sufferers, has been greatly increased as a consequence of the Insurance Act. I mention these things, though they may be everyone's common experience now, because they prove that some of the prognostications concerning the results of the Act have turned out correct, The supporters of the measure in early days said that its passage would lead to earlier diagnosis of disease and a slump in the sale of quack medicines.

Fever Hospital Nurses and the Act.

In regard to asylums or fever hospitals a complication in the working of the Act was brought to my notice. What is to be done if the nurses and others employed at these institutions fall ill? At Aberdeen an application was made and refused that they should be considered as special institutions under the Act. The nurses and others could then in the future as in the past be attended by the resident medical staff. If not, then as the resident staff of, for instance, the fever hospital is not on the panel, the nurses, the maids, and servants of the hospital must contract out of the Act or bring an outside panel doctor to the hospital, and that would be a rather curious situation. The only other solution would be for the resident hospital medical staff to go on the panel. The Poor-law medical officers and the medical staff of the workhouse infirmary are in the same predicament, and as far as I have heard no solution of the difficulty has been found. If the hospital nurses and servants are to be allotted to the panel doctors this will add to the amount of practice available for the medical men of the towns. The poorhouse doctors were allowed to go on the panel, but if they are whole-time officers they cannot do so. In a general hospital the members of the visiting or consulting staff are in practice in the town. There is nothing to prevent them from going on the panel. The nurses and others employed at the general hospital can inscribe themselves on the lists of the members of the hospital's medical staff. But this cannot be done in the asylums and the fever hospitals, and nobody at Aberdeen had at the time of my visit discovered a way out of this difficulty.

(To be continued.)

TUBERCULOSIS TREATMENT IN GERMANY.

(FROM A SPECIAL CORRESPONDENT.)

A SYSTEMATIC fight against tuberculosis, as foreshadowed in the British National Insurance Act, is not contemplated by the German insurance system, and it is only in certain cases that the insured here receive treatment when the presence of this affection has been diagnosed. The German worker has to insure in two distinct contributory forms of insurance; the first, entirely self-governing, deals only with sickness and ceases at the expiration of 26 weeks. After this period the second branch of national insurance, which provides against invalidity and old age, has to assume the care of the insured if still incapacitated for work, and this is effected by paying him a certain invalidity pension. Only in those cases in which a course of special treatment offers a promise of restoring the insured person's capacity for work and thereby rendering him once more fit to earn a living, does the invalidity insurance take the necessary steps to provide the proper treatment, and, indeed, compels the insured to undergo the prescribed treatment instead of paying out the invalidity pension to which he would be entitled. This fact must be borne in mind when taking into consideration the unusually high percentage of successes recorded in the returns now issued by the Imperial Insurance Bureau, for only those cases which offer an almost certain promise of success are from the beginning properly treated; advanced cases are excluded and are not recorded in the statistics, as they have not been submitted to specific treatment.

Statistics.

According to the now published statistics for the year 1911, in all 48,918 insured were under specific treatment for pulmonary or laryngeal tuberculosis; this represents 39·58 per cent. of the total number of persons receiving treatment under the control of the invalidity insurance authorities. Of these tuberculous subjects, 47,579 (31.641 men and 15,938 women), or 97·26 per cent., underwent permanent treatment in sanatoriums, &c., and only 1339 (1170 men and 169 women), or 2·74 per cent., received ambulant treatment in the doctor's consultation hours.

The average duration of sanatorium treatment was 72 days; the cost for each case treated amounted to £20 6*s.* 10*d.* for males and £16 11*s.* 5*d.* for females. The high average cost of each case, when compared with the expenditure in the treatment of other forms of illness, is explained by the high feeding required by this class of patient. The actual expenditure for food per sanatorium inmate varied from 1*s.* 1½*d.* to 2*s.* 9½*d.* a day. The average daily expenditure in the case of a male tuberculous patient amounted to 5*s.* 10½*d.*; for a female, 4*s.* 3½*d.* In these figures, however, the allowance paid to the patient's dependents during his stay in the sanatorium is also included. The total cost of tuberculosis treatment during 1911 was £913,650, and the relatively high cost of combating the white plague is apparent when compared with a total expenditure of £470,800 entailed in the treatment of almost double the amount of insured persons (74,494) suffering from other diseases. From 1897 to 1911 altogether 370.842 tuberculous cases were treated at an aggregate cost of £6,774.553.

"The insurance boards have of late shown a greater tendency to first place persons in whom the presence of tuberculosis has not yet been satisfactorily demonstrated, or where there is some doubt as to the suitability of institute treatment, under observation in a hospital, sanatorium, tuberculin or tuberculosis station for eight to ten days until a reliable diagnosis has been established. This measure is particularly adapted to avoid an overcrowding of the sanatoria with unsuitable patients.

An attempt has been made to determine the various occupations yielding the most tuberculosis; unfortunately the necessary details were forthcoming in only about one-half of the total number of insured treated. According to the data thus obtained among the male patients the greatest proportion was furnished by metal workers (15·2 per cent.), building trade (10·5 per cent.), engineering trades (8·4 per cent.), miners (8·4 per cent.), clerks (7·4 per cent.), wood carvers (7·4 per cent.), and traffic employees (7·1 per cent.). Among the females the following occupations are represented: servants (25·9 per cent.), tailoring (12·8 per cent.), saleswomen, &c. (12·6 per cent.), and textile workers (12·3 per cent.). As regards the incidence of tuberculosis at different ages, it has been found that between 16 and 20 years the number of females is double that of males; between 20 and 25 years of age the females show a greater incidence over the men by 17 per cent. In the age group of 25 to 30 years both sexes are almost equally represented; in the next group, 30 to 35 years, the number of females sinks by 7 per cent. when compared with the men, while between 35 and 40 years almost double as many males are affected as females, and the proportion of female to male figures with 1 to 3 for the ages between 40 and 50 years, while practically no women occur among those over 50 years of age undergoing specific treatment.

Results of Treatment.

Some interesting figures regarding the actual results of tuberculosis treatment are contained in the report under discussion. The insurance authorities make a distinction between an "initial success" and a "permanent success." The former applies to cases in which, after undergoing special treatment, the insured is able to resume his occupation, while a "permanent success" implies restoration to health for a period of six years, established by three control examinations undertaken at intervals of two years after the end of the first year following the specific treatment.

Of 42,400 cases treated in sanatoriums during 1911 in which the presence of tuberculosis was definitely established, 38,515 were dismissed after the treatment had yielded a satisfactory result; this implies an "initial success" in 91 per cent. of the patients who underwent specific treatment. A success was recorded in 1604 out of 1668 cases of suspected tuberculosis among patients sent for sanatorium treatment, so that this class showed 96 per cent. of successes. In the years 1906 and 1908 the percentage of "initial successes" averaged 83 for both sexes, although the number is actually higher among the females than the males—1906, males 82 per cent., females 85 per cent.; 1908, males 81 per cent., females 86 per cent.; 1910, males 90 per cent., females 91 per cent.; 1911, males and females 91 per cent. It is thus apparent that with each succeeding year the percentage of successful treatments has increased; this, however, is largely due to the greater care in selecting suitable cases for specific treatment, apart from the advances made in recent years based on practical experience.

In view of the divergence of opinion regarding the practical results of institutional treatment of tuberculosis, particular interest attaches to the figures relating to the "permanent successes." In the year 1906 31,022 insured persons (21,959 males and 9063 females) underwent specific treatment for tuberculosis in sanatoriums, with the result that at the end of treatment an "initial success" was obtained in 25,749 persons, or in 83 per cent. of those treated (18,001 males—82 per cent.; 7748 females—85 per cent.).

The following figures show the percentage of the "initial successes" obtained in 1906 still enjoying good health—that is to say, not incapacitated for work, but earning a living, at the end of one, three, and five years after the conclusion of sanatorium treatment. Percentage of tuberculous cases successfully treated in 1906: Males 82 per cent., females 85 per cent.; average 83 per cent. Percentage of those successfully treated in 1906 still in good health at the end of the year 1907: Males 80 per cent., females 83 per cent., average 81 per cent.; at the end of the year 1909: males 61 per cent., females 68 per cent., average 63 per cent.; and at the end of the year 1911: males 55 per cent., females 62 per cent., average 57 per cent.

A control examination of 3711 persons unsuccessfully treated for tuberculosis in 1906 undertaken at the end of 1911 showed that in 688 cases (20 per cent.) the patients had in the meantime regained their capacity for work; the proportion increases with each succeeding year, for the control examination of the year 1911 established that the number of persons unsuccessfully treated in 1908 and 1910 who had resumed their calling since being dismissed from the sanatoriums amounted to 22 and 28 per cent. respectively. It is, of course, difficult to state the exact ulterior influence of sanatorium treatment in these cases.

Graduated Work and After Care.

The report states that greater attention is now being paid to the question of exercise of tuberculosis patients, and in several sanatoriums the inmates are compelled to accomplish a certain amount of work as part of the routine medical

treatment. Men are occupied from half an hour to six hours a day and women from a quarter of an hour to three hours; on an average the work prescribed lasts only one to two hours. In some cases they receive a slight remuneration—1½*d.* to 2*d.* per hour—for their work. In one case arrangements have been made with a gardener to employ a certain number of patients leaving the sanatorium for a period of three months before returning to their ordinary occupations. The forest shelters, places situated in the woods where the patients spend the day in the open air, returning to their homes every night, are also being made use of on an increased scale, especially in the case of convalescents, while incurable cases receiving a disablement pension are being induced to enter suitable institutions, so as not to remain a menace to their fellow men.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis Scheme.

A MORE complete scheme for the treatment of tuberculosis has been presented to the city council. It will mean an additional charge upon the rates of just over a halfpenny rate. The scheme has been fully approved by the Government, and the corporation anticipate that the Treasury will make payments on both revenue and capital accounts. The chief expenditure will be for the enlargement and furnishing of the Baguley Sanatorium for the treatment of tuberculosis, the provision of new wards at Monsall Hospital at a capital outlay of £53,445, and the purchase of the Abergele Sanatorium for £20,000. The total outlay will be £78,645. The Treasury grant is £22,500, which leaves £56,145, which the sanitary committee recommend should be borrowed with the sanction of the Local Government Board. Dr. J. Niven in his report states that the essential features are the establishment of a central dispensary and of a linked system of treatment of the cases of tuberculosis occurring in the city. The cases will be treated partly at sanatoriums, partly at the central dispensary in Hardman-street—with a special tuberculosis service—and partly at home. At the central dispensary there will be five physicians, each with a salary of £250 per annum. Eight visiting nurses are provided in the scheme. The whole-time tuberculosis staff will consist of at least four whole-time tuberculosis officers, a senior at £500 per annum, and three juniors at £300 per annum. The full medical establishment of the dispensary will include 5 physicians, 4 whole-time tuberculosis officers, 8 nurses, 2 medical clerks, a secretary, dentist, dispenser, a general clerk, and 2 nurses in attendance on cases. Each week 54 hours of treatment will be given, which means that about 378 can be seen, and as the average interval of attendance may be put down at a fortnight, 756 can be kept under treatment. The scheme makes provision for continuous treatment at the dispensary for 1100 cases. The number of beds at the sanatoriums will be increased by 150.

Appeal for Central Branch of Royal Infirmary.

The board of management of the Royal Infirmary is making an appeal for £25,000 to defray the cost of the central branch for accidents and out-patients which is now in course of construction. Of this sum about £8000 have been received or promised. The chairman in his appeal suggests that it would be a fitting tribute to the King and Queen, whose interest in hospitals and in the sick poor is well known, if it were possible to point to this central branch and to inform Their Majesties that Manchester had contributed the necessary funds to erect and equip it in honour of their visit. The King and Queen will visit Manchester in a month, and the problem is to raise £17,000 in this short time. The chairman is sanguine enough to hope from previous experience of the generosity of the Manchester public that the appeal will be successful. The central branch will contain 12 beds for the immediate admission of cases of serious accident.

An Appeal on Behalf of the London School of Tropical Medicine.

At the beginning of the year a London City committee was organised to raise £100,000 to extend the work of the London School of Tropical Medicine, and of this sum so far £62,000 have been raised. It was suggested that other commercial cities of the country should have the opportunity of joining with London if they thought fit. Mr. Beesley, on behalf of the London committee, on June 13th visited Manchester, and addressed a meeting held in the Chamber of Commerce. Invitations were sent out to firms engaged in the Indian and Eastern trade, but not many persons were present. Mr. Beesley mentioned incidentally that plague had carried off 12,000,000 people in India. Even within the present century tropical diseases followed the trade routes. The London School had already trained 1200 medical men. What was wanted above all was the endowment of research. During 27 years the death-rate of European officials in the tropics had fallen from 90 to 12 per 1000. The Liverpool and London Schools did not overlap. The former worked mainly in South America and West Africa; the latter went further out east and more into British possessions. Those who were working for the London School did not want to divert money from the Liverpool School. The chairman promised to bring the matter before the sections of the Chamber of Commerce interested in the Indian and Colonial trades.

"Humane Slaughter" of Animals: Demonstration in Salford.

About seven years ago the Royal Society for the Prevention of Cruelty to Animals opened a campaign with the object of introducing more humane methods of killing animals at abattoirs than those in general use in this country. On an average about 50,000 animals are slaughtered daily in this country, and it is contended that the suffering in bulk is sufficiently great to warrant the attack which the society is waging on the present pole-axe and other systems. A demonstration of the new method was given to butchers and others in the trade on June 10th at the Salford abattoir.

June 17th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Housing Accommodation in Cardiff.

IN recent years there has been a great deal of fluctuation in the number of unoccupied working-class houses in Cardiff. A few years ago there was a large number, but with the increasing prosperity of the town the number has decreased year by year until there are now said to be only about 2 per cent. of empty houses in the borough. This is about the percentage which has been found in Barry, in the Rhondda valleys, and elsewhere, even when the demand for houses has been very great, and at a recent meeting of the housing committee of the corporation it was stated that 500 new houses would readily find tenants. The committee has decided to build 30 houses at an estimated total cost of £5495 and to let them at a weekly rental of 6*s.* 6*d.* The money required will be borrowed for 60 years, and it is said that the income will be sufficient to make the scheme self-supporting. A proposal to convert a large building owned by the corporation into tenement dwellings at a cost of £200 for each dwelling was strongly opposed by the medical officer of health, Dr. E. Walford, who considered that this type of dwelling from a sanitary point of view was most undesirable, and in this contention he is supported by the advisers of the Local Government Board. Several members of the committee agreed with Dr. Walford, and maintained that block dwellings should only be erected as a last resource and when all the unoccupied land had been exhausted. The committee unanimously supported this view, so that for the present, at any rate, there will be no municipal block dwellings in Cardiff.

Newport Hospital Convalescent Home.

The late Lord Tredegar, for many years the president of the Newport Hospital, was a very generous supporter of the institution. When the present buildings were erected in 1900 he gave the site of four and a half acres on which they were built, besides contributing largely to the cost of the building. Although situated quite within the town there is a considerable amount of unbuilt ground surrounding the hospital, including the Belle vue Park, which was also the gift to the town of the late Viscount. Between this park and the hospital grounds there is a small estate of about 14 acres on

which is situated a comfortable sized house. This estate, together with the house, has lately been presented to the hospital authorities by the present Lord Tredegar, and will be used as a convalescent home for the hospital patients. The value of the gift is said to be between £20,000 and £25,000, and the hospital will now for all time be surrounded by extensive grounds which cannot be built over. The usefulness of the institution has been very considerably increased by this thoughtful and well-timed gift.

Public Health in Brecon.

The population of the town of Brecon is under 6000, and from its situation it ought to have a very satisfactory record from a public health point of view. In several particulars, however, such is not the case. In 1912 there was recorded the high infantile mortality rate of 146 per 1000 births, a circumstance to which the medical officer of health, Mr. D. V. Rees, has drawn particular attention. He has advised the urban district council to adopt the Notification of Births Act, and if this advice is acted upon and a woman health visitor is employed some reduction of this large number of deaths among young children may result. The housing conditions in many parts of the town are very unsatisfactory, and the presence of refuse tips may also be a factor increasing the number of infant deaths. A suggestion has already been made to erect a refuse destructor, and nothing but good could result from the adoption of the proposal. There is also need for better isolation hospital accommodation.

Breconshire Tuberculosis Sanatorium.

The Welsh National Memorial Association has purchased for the purposes of a sanatorium the Pontywal Hall estate, about seven miles from the town of Brecon and about two miles from Talgarth. It is some 370 acres in extent, and is 600 feet above sea level. A portion of the estate is under cultivation, but a great deal of it is wooded, with many fine oak trees and fir plantations. The large stone mansion will be used as an administrative block and residence for the staff. It includes large dining and drawing-rooms, a billiard-room, several other reception rooms, and 15 bedrooms, together with bathrooms, kitchens, &c. It is already lighted with electricity and heated by means of hot water. There are also on the estate a farmhouse, lodges, and several cottages. It is proposed to erect near the front of the house pavilions, dining halls, and kitchens for adult patients, and more remote from the house buildings will be put up for children. The institution is intended to serve the needs of the South Wales counties, for which at present the only sanatorium is that at Allt-y-Mynydd in Carmarthenshire, which was erected eight or nine years ago by voluntary subscription and by funds provided by the county councils of Pembrokeshire, Carmarthenshire, and Cardiganshire. This institution was taken over last year, and is now being administered by the National Memorial Association.

Devon County Sanatorium.

The Devon County Sanatorium at Hawkmoor, Bovey Tracey, was opened on June 9th, when six patients were admitted for treatment. The sanatorium, which was selected on the recommendation of the medical officer of health (Mr. G. Adkins), includes a house, formerly in the occupation of the Hon. Colonel Trefusis, and grounds of about 90 acres, and has been purchased by the Devon county council for £5000. At present 15 "shelters" are provided for the patients, but later it is hoped to add two wings to the residence (which is at present used for administrative purposes), each of which will accommodate 40 male and 40 female patients respectively. The sanatorium is for the administrative county of Devon and the city of Exeter.

Medical Inspection of School Children in Devon.

Mr. Adkins, in his annual report on the medical inspection of school children to the Devon education committee, states that in 1912 the number of children examined amounted to 17,967, and of these 3254 were found defective. Notices had been sent to the parents of these defective children, and 29·1 per cent. of the notices had been complied with, as compared with 34·7 per cent. for 1911.

New Baths for Torquay.

At the annual meeting of the South-Western Branch of the British Medical Association at Torquay on June 11th Mr. G. Young Eales, in the course of an interesting presidential address, gave an account of the new scheme for medicated and swimming baths which the Torquay corporation is carrying out. The baths will consist of male and female sections, the former comprising 7 baths and 16 dressing-rooms, the latter 6 baths and 13 dressing-rooms, and it is estimated that about 100 cases can be treated daily by these means. Mr. Eales alluded to the importance of obtaining efficient bath attendants, and said that the corporation had promised to engage the best officials they could secure. He added that the new baths of Torquay would be a great boon to the medical profession practising in the south-western counties.

The late Dr. E. A. Wilson.

The residents of Cheltenham have decided to erect a bronze statue—designed by Lady Scott—in the long garden of the Promenade as a memorial to the late Dr. E. A. Wilson, the Antarctic explorer.

The Rev. Charles Watts Whistler, M.R.C.S. Eng.

The death has recently occurred at Weymouth of the Rev. C. W. Whistler, late rector of Cheselbourne, near Dorchester. The deceased, who was in his fifty-seventh year, was the eldest son of the late Rev. F. R. Whistler, rector of Elton. He was educated at Merchant Taylors' School, Emmanuel College, Cambridge, and St. Thomas's Hospital. He qualified M.R.C.S. Eng. and L.S.A. in 1881, and for the following three years practised at Bures, Suffolk, where he was also surgeon to the West Suffolk Volunteers. In 1884 he took holy orders and in 1895 he was appointed vicar of Stockland, Somerset; he remained there until 1909, when he accepted the living of Cheselbourne, but recently he had resigned this appointment. Mr. Whistler was a man of versatile talent and was highly respected on account of his culture and kindness. He was the author of some West Country historical romances, and he took great interest in archæology, photography, and rifle-shooting.

June 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Local Government Board for Scotland: Annual Report for 1912.

THE Scottish Local Government Board has recently issued its eighteenth annual report, which relates to the advisory and administrative functions of the central authority in respect of (1) Public health and (2) Poor-law. This report contains evidence of greatly increased activity in public health matters, the authorities in this country having profited by the experience of other parts of the kingdom, and having adopted many of the preventive measures that have been proved successful on this side of the Tweed. During the year 1912 a new arrangement was inaugurated whereby the compilation of mortality statistics is to be undertaken by the Registrar-General exclusively. Under this system greater uniformity is hoped for in the allocation of the deaths of non-residents. For the future the statistics published by the Scottish Registrar-General will be classified according to administrative areas, instead of to registration or Poor-law districts as heretofore. By this rearrangement, which will be welcomed by the local medical officers of health, the death registration system of Scotland will be brought into line with that of England and Wales. As, however, the Registrar-General's reports will not deal with notifications under the Infectious Diseases (Notification) Act, this information will still be published, and circulated, by the Board in the form set forth in an appendix to the present report. In consequence of the passing of the National Insurance Act, 1911, a considerable amount of work has devolved upon the Local Government Board. In view of the provisions of that Act dealing with sanatorium benefit, the question of making compulsory throughout Scotland the notification of pulmonary tuberculosis was carefully considered by the Board during the year under notice. Being satisfied that the time had arrived for taking decisive steps, the Board has issued statutory regulations providing for compulsory notification, as from August 1st, 1912, of all cases of this disease in Scotland. Under these regulations arrangements are made whereby a medical officer

of health who receives information of the occurrence of a case of pulmonary tuberculosis in a patient whose usual residence is outside his own district, shall forthwith send particulars of the case to the health officer of the district in which the patient resides. By means of this interchange of information it will, in many cases, be possible to follow up contacts, and thus to detect cases in the early stages, which might otherwise remain undiscovered until a later and more dangerous stage of the disease.

Glasgow Medical Faculty: The Finlayson Lecture.

The Finlayson memorial lecture was delivered on June 6th at a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, in the Faculty Hall, by Sir T. Clifford Allbutt, Regius professor of physic, Cambridge, who took as his subject Byzantine Medicine from Galen to Salerno.

Montrose Asylum.

In his annual report Dr. J. G. Havelock, medical superintendent to the Montrose Royal Asylum, states that in his opinion the number of patients admitted labouring under delusions of persecution was steadily on the increase, while, on the other hand, the victims of so-called religious mania were becoming less numerous as the years went on. The changes in the outward manifestations of mental derangement might be explained by the altered conditions of modern life and thought. That type of patient, so common a quarter of a century ago, who laboured under the delusion that he was possessed of an evil spirit, or was eternally damned because he had committed the unpardonable sin, was represented nowadays by the no less unhappy being who thought that his neighbours persecuted him by wireless telephony, or that his nervous system was being destroyed by electric discharges emanating from the aeroplanes which moved above them.

Dundee Infirmary.

The annual meeting of the directors of the Dundee Royal Infirmary was held last week, and disclosed the large deficit of £9411 12*s.* 1*d.* To meet this deficiency £10,000 has been transferred from the reserve to current account. The income for the year amounted to £12,733 19*s.* 4*d.*, a decrease of £430 13*s.* 7*d.* from the previous year. Subscriptions had decreased by £48, and donations by £143; collections by workers had decreased £179, churches by £55, nurses' training fees by £75; on the other hand, students' fees had increased by £45, and other sundries by £35. The ordinary expenditure amounted to £19,160 14*s.* 4*d.*, an increase of £1987 11*s.* 2*d.* The extraordinary expenditure amounted to £3004 16*s.* 11*d.* A very considerable reduction in the number of out-patients had taken place during the year, and this reduction was likely to be increased when insured persons ceased to attend the infirmary for such ordinary ailments as could be satisfactorily treated under the arrangements of the National Insurance Act, so permitting the out-patient department to be largely used for consultations and for the treatment of special diseases. The directors had carefully considered the case regarding the admission as in-patients of insured persons. They had been in communication with the Approved Societies, which there was reason to believe would recognise the services rendered to their members receiving the benefits of the institution by contributing to the funds of the infirmary. The chairman, in moving the adoption of the report, said the outstanding question in the year's working was what effect the National Insurance Act would have on the infirmary. The directors felt it was necessary to safeguard the privileges of those who supported the infirmary, as well as to maintain its position in the city as a centre for the treatment of invalid people. It was also necessary to see that the medical officers were not asked to give attention or treatment to those suffering from minor ailments which could well be treated by medical practitioners under agreement to undertake such service. It was, of course, impossible to forecast the effect of the Act, but it seemed wise to proceed cautiously, and from the experience they had had it would appear as if the problem would solve itself. A reduction in numbers had taken place without any diminution of the importance of any of the departments of the infirmary, as these would in the future be called upon to assist in the diagnosis and treatment of more serious diseases.

June 16th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Medical Association.

THE annual meeting of the Irish Medical Association was held on June 11th in Dublin, at the Royal College of Surgeons, being attended by between 40 and 50 members. The outgoing President, Sir Robert Woods, being absent in London, the chair was occupied at first by Dr. Leonard Kidd, and subsequently by the new President, Mr. J. B. Story. Mr. R. Marlay Blake (Dundalk) moved, "That the representatives of the Irish Medical Association on the Conjoint Committee be called upon to resign their positions on that committee." He mentioned that at a meeting held recently of Irish Poor-law medical men a resolution was passed dissociating themselves from the action of that committee. Mr. A. C. Callaghan (co. Galway), in seconding, said that the great majority of the profession in Ireland were dissatisfied with the action of the Conjoint Committee. Dr. J. S. Darling (Lurgan) said that the Conjoint Committee was the only body in Ireland which could speak for the whole country. The question that was before the meeting was to deprive Ireland of the only organised central body that could speak for the profession. The resolution was adopted. Dr. Kelly proposed a resolution expressing emphatic disapproval of medical practitioners joining the panels for certifying under the National Insurance Act. After a good deal of discussion the resolution was adopted. In the evening the annual banquet of the association was given in the Royal College of Surgeons, the President in the chair.

The Organisation of the Profession in Ireland.

The withdrawal of the Irish Medical Association from participation in the Conjoint Committee is a blow to the organisation of the profession. In order to understand the position of the Conjoint Committee it is necessary to recall its origin. At a meeting of the entire profession held in Dublin on June 30th, 1911, a committee was appointed to represent the profession on matters relating to the National Insurance Act. It was to be composed of the Irish Committee of the British Medical Association and the Committee of Council of the Irish Medical Association. This committee acted as the executive of the profession for nearly 12 months, and submitted its report to a meeting of delegates held in the Mansion House, Dublin, on June 11th, 1912. That meeting, feeling that a body more directly representative of the various interests of the profession was required, set up a new committee, which, like its predecessor, has been generally known as the Conjoint Committee. It is constituted as follows:—1. The Irish Committee of the British Medical Association. 2. An equal number selected by the Council of the Irish Medical Association. 3. Three elected by each provincial committee, with the addition of one each for Dublin, Belfast, Cork, and Galway. 4. One representative of each of the following bodies: the University of Dublin Medical School, the University College Medical School, the Queen's University Medical School, the Royal College of Physicians, the Royal College of Surgeons, the Apothecaries' Hall, the Medical School, University College, Cork, the Medical School, University College, Galway, the Royal Academy of Medicine, the Ulster Medical Society, the Cork Medical Society, and the Belfast Medical Guild. 5. Two representatives appointed by the medical women of Ireland. 6. The committee to have power to coöpt six additional members. This committee to be subject to election annually in June. The committee is therefore composed of 56 members, of whom 17 are direct representatives of the Irish Medical Association. It would be difficult to construct an organisation more thoroughly representative of the profession as a whole. Most of the criticism to which this body has recently been subjected is due to misunderstanding. It is charged against the committee that, in excess of its authority, it accepted on behalf of the profession an offer from the Insurance Commissioners for payment for certificates lower than the terms laid down at the delegates' meeting. The committee received and discussed the offer, but protested against its inadequacy, and left the decision as to its refusal or acceptance to the Local Medical Committees. Several important Committees accepted, but the majority refused, and no general arrangement has yet been made. It is on

a misunderstanding of the action of the committee in regard to this offer that the disappearance of a section of the Irish Medical Association is based. The withdrawal of that association does not, however, break up the professional organisation. But it only means that some 17 members have retired from a committee of 56. It will be for the profession to decide how the vacancies shall be filled.

"Medical Advisers" and Certification.

On June 12th the Insurance Commissioners announced that, panels not having been formed in the county boroughs of Dublin, Limerick, and Waterford, they had made alternative arrangements for certification in these areas. In Dublin 15 practitioners, in Limerick 2, and in Waterford 2 had been appointed as "medical advisers." A number of insured persons was to be allotted to each of these practitioners, and in any case of suspected malingering the suspected person was to be examined by the practitioner to whom he had been allotted. The position taken by the Commissioners is somewhat peculiar. Parliament voted a sum of money to be applied to the purpose of payment for medical certificates under the Insurance Act; in other words, to furnishing facilities to insured persons claiming their benefits. The Commissioners are leaving this problem untouched and are devoting the money to protecting the societies against persons already suspected of malingering. The terms of appointment of the "medical advisers" being deemed unsatisfactory by the Dublin Local Medical Committee, a warning notice had been issued in advance, and since the appointments have been announced the committee has declared that they are "a deliberate attempt to thwart the efforts of the profession to ensure adequate remuneration for the certification of insured persons," and has called on those who have accepted the posts to withdraw. Two gentlemen have done so. The list of names still on the "board of medical advisers" gives rise to a good deal of adverse comment.

Medical Referees in Belfast.

The relationship between the medical referees appointed by some of the Approved Societies in Belfast and the medical profession in that city has become so strained that a special meeting of the Local Medical Committee has been summoned for June 18th to consider the question. Many of the profession in that city regret now that they went on the panel.

Glenavy Dispensary District.

Dr. Thomas West, of Antrim, was on June 10th elected by the Lisburn board of guardians medical officer of the Glenavy dispensary district in place of Mr. Norman C. Patrick, who has been appointed tuberculosis medical officer for the county of Antrim.

June 17th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Mortality from Syphilis in Paris in 1910.

AT the Société Française de Dermatologie et de Syphiligraphie on June 5th, M. Leredde stated that he had attempted to calculate the mortality occasioned by syphilis in Paris, by taking into account various factors, of which the chief was the frequency of the Wassermann reaction in various affections. Besides the 111 cases assigned to syphilis in the official statistics of M. Bertillon, the 188 cases of general paralysis, and the 66 of locomotor ataxia, there may be attributed to a syphilitic origin one-third of the deaths from cerebral hæmorrhage, apoplexy, and softening, from paralysis of undetermined causation, affections of the spinal cord, and various diseases of the nervous system; one-tenth of the deaths due to encephalitis, non-tuberculous meningitis, and epilepsy; one-third of those from organic heart disease; three-fourths of those due to angina pectoris; one-half of those from aneurysm, atheroma, and affections of the arteries, and one-fifth of those from hepatic cirrhosis and Bright's disease. A total figure of 3374 deaths due to syphilis in 1910 is thus arrived at, excluding such diseases as pulmonary affections, icterus gravis, gastric ulcer, and especially congenital debility, and icterus and sclerema of the newly born, which kill 1268 children per annum. A large number of the deaths in early infancy are certainly due to syphilis. On the other hand, it must be remembered that municipal statistics show that 4182 stillbirths were notified in 1910. In 1910 11,723 Parisians succumbed to tuberculosis, and only 2548 to cancer.

The Treatment of Fractures of the Thigh.

M. Walther showed at the Société de Chirurgie on May 24th four persons injured in a railway accident who had had their thighs caught between the seats. They had suffered considerable contusion of the soft tissues, with fracture of the thigh, and in one of them both fragments had penetrated the skin. Reduction was extremely difficult. M. Walther succeeded in effecting it by means of Lambret's apparatus, with results in all cases as perfect as could be hoped for. M. Delbet objected that these fractures were direct transverse fractures, and that in his opinion that kind of fracture was much less serious than an oblique fracture. All the subjects had talipes equinus with tibio-tarsal ankylosis. A deformed limb with a supple ankle-joint would have been preferable in his opinion. The ideal treatment, he thought, lay in the application of some apparatus which allowed of walking, thus stimulating the tissue vitality. M. Walther, in reply, said that the cases were particularly serious, with crushing of the soft parts, and it would have been entirely impossible to adopt any apparatus for the ambulant method. He remarked, in closing, that the patients' skins had been cleansed with tincture of iodine, and that they remained free from infection.

The Academy of Medicine.

On June 10th the Academy of Medicine elected as its permanent secretary Professor Debove, a former dean of the Faculty of Medicine, by 86 votes out of 90 (4 being blank), in place of M. Jaccoud, deceased. The permanent secretary was authorised to accept on behalf of the Academy, under the conditions imposed and subject to the life interest laid down in the will in favour of Madame Carie Crabié, widow of the testator, the legacy of M. le Piez, consisting of a sum of 30,000 francs, payable on the death of the life heir, for the purpose of founding a prize to be awarded every other year for the best essay on some subject in medicine or surgery at the discretion of the Academy. This prize is to called the Prix Le Piez.

The Exploitation of Serums.

Protests have been made by the medical profession, both in the Syndicates and at the Academy of Medicine, against the law regulating the preparation, sale, and distribution of serums. The medical protest has found an echo in the Chamber of Deputies. During the discussion on finance M. Leboucq, a Paris deputy, called on the Government to abolish the impediments thrown in the way of research and experiment with new serums. The present Minister of the Interior, M. Klotz, sustained the promise made to the Chamber by his predecessors. He referred to the fact that the medical profession had been greatly disturbed by the law of 1911, which seemed to fetter the right of medical men to seek for and experiment with new serums. Consequently, M. Klotz has submitted for the signature of the President of the Republic a Bill to make it clear that the provisions of the law are not to be applied to medical men who use therapeutic serums and other analogous products with the purpose of experimenting as to their innocuousness and efficaciousness in human beings, on condition that they hold themselves responsible for the consequences of the treatment practised by them and do not receive any remuneration for this treatment. They must furnish themselves with a Government permit when they wish to bring the product into use in the course of practice.

The Compulsory Notification of Tuberculosis.

On June 3rd M. Roux, director of the Institut Pasteur, declared himself in favour of compulsory notification of tuberculosis to a medical officer of health. M. Roux considers that infection occurs much more generally from close and prolonged contact with a bacillus carrier than from dust contagion. He also thinks that protection against contagion from the living tuberculous patient is of greater importance than disinfection after death. Notification would not entail any vexatious consequences on the patient and would not infringe professional secrecy, thanks to the institution of the medical officer of health, to whom alone the notification would be made by the medical attendant. M. Charles Richet

concurred in these views, and said that he could not understand why tuberculosis, an essentially contagious disease, should be omitted from the list of compulsorily notifiable diseases. As to deciding what cases of tuberculosis should be declared, it was clearly those that the medical man deemed dangerous as being likely to give rise to contagion.

Ancient Hospitals.

Two ancient hospitals have completely disappeared from Paris, the Hôpital Cochin and the Hôpital Ricord, to be replaced by new structures better adapted to their objects. Of the Hôpital Cochin only one pavilion, of recent construction, reserved for women, remains, and the architects have made many useful modifications therein. Of the ancient Hôpital du Midi (Ricord) nothing remains but the façade, in front of which is a bronze bust of Ricord.

June 16th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Korányi.

THE Hungarian medical profession has sustained a serious loss by the death of Professor Frederic Korányi, who is mourned in all parts of the country where there are medical men. The deceased was 85 years of age, and was an active worker in the field of medical science for 60 years. He was professor of clinical medicine for 43 years, during which time he actually taught about 8000 medical students. He was not a mere lecturer, but he used to sit at the bedside of the patients, together with the students, perhaps for an hour, till his class, with the help of his suggestions, arrived at the proper diagnosis. His pupils regarded him with unusual affection, and he was popular with all classes. His Majesty King Francis Joseph, patron of the University of Budapest, gave Professor Korányi many tokens of his sympathy and favour. In 1876 the title of "Adviser to the King" was bestowed on him. In 1884 he was admitted into the ranks of the nobility with an affix to his name, which then became "von Korányi." In 1887 he received the decoration of the Order of the Iron Cross. In 1909 His Majesty conferred on him and on his lawful offspring the title of "Baron." Professor Korányi was born in 1828 at Nagykálló, in Hungary, and graduated as Doctor of Medicine in 1851. As a student he took part in the revolutionary war of 1848 as an assistant surgeon. He afterwards went to Vienna, where he continued his studies under Professor Schuh of the Surgical Clinic, and after two years he settled in Nagykálló, his native place, as a general practitioner. Here he remained until the year 1865, gaining the reputation of being the most skilful medical man in the whole district, and being also very popular with the public in general. His ambition, however, was not satisfied with country practice; in 1866 he became a lecturer on nervous diseases in the University of Budapest, and a year later he was appointed a regular professor of clinical medicine. It might be said of him that he was the creator of modern medicine in Hungary, and that the revival of post-graduate study was his work. He, in fact, organised a medical school equal to any clinic of the continent. His scientific industry was attested by a number of medical monographs, which have gained him reputation not only in his own country but also in all parts of the world. His start in literature was when he was invited by the editors of the Billroth Pitha large "Clinical Medicine" to write the chapters on typhoid fever and cholera. The celebrated Vienna professors asked him to contribute to what was then the best text-book on medicine, although he was still a modest country practitioner in Hungary. He edited the "Text-book of Clinical Medicine" (in Hungarian language), and contributed to Nothnagel's "Handbook of Clinical Medicine." His latest work was entitled "Recent Advances in Clinical Medicine." His scientific activity was accompanied by important work in the field of social medicine. The starting of the movement against tuberculosis in Hungary is inseparable from his name. The first earnest step in the movement was his great speech in the House of Peers, resulting in the establishing of the sanatorium named after our late Queen Elizabeth. In the closing days of his life the reforms initiated by him had a valuable result in the issue of the new regulation of the Minister of Public Hygiene ordering the compulsory notification of pulmonary tuberculosis. Professor Korányi had honours and titles such as no other medical man in Hungary possessed, but an even higher tribute to his merits was provided by the gratitude of thousands of his patients and the respectful esteem of his pupils.

Cholera Inspectors in Hungary.

This country is preparing very earnestly against a possible epidemic of cholera which threatens us from the southern states. Towns and parishes have been ordered by the Minister of Public Hygiene to carry out all the hygienic regulations and to take very strict precautions. Inspectors have been directed to examine once a week all public thoroughfares, health resorts, sewers, rivers, public buildings, restaurants, manufactories, schools, and houses occupied by the poorer classes. These inspectors have also to satisfy themselves that the drinking water supplied to the public is of sufficient purity, and to enforce cleanliness in butchers' shops, slaughter-houses, and other places where food is stored or prepared. Every case of suspicious enteritis has to be notified immediately. This strict observance of the regulations is the outcome of rumours from the Balkan States about the spread of cholera towards Servia, which is our immediate neighbour.

Communication of Syphilis by a Patient to his Medical Adviser: The Legal Point of View.

A country practitioner in the south-eastern portion of Hungary has, according to his own statement, been accidentally infected with syphilis through giving a calomel injection to a syphilitic patient. When afterwards wiping the needle with a piece of wadding he pricked one of his fingers, but the wound seemed to be so unimportant, being, in fact, hardly visible, that he did not apply any dressing, but only washed the finger with a solution of corrosive sublimate. The accident took place in the presence of the patient. Four weeks later the medical man found that he was suffering from a skin eruption due to secondary syphilis, and a few days afterwards his throat also began to show syphilitic manifestations. He then applied to the accident insurance company, in which he was insured, claiming payment for partial disablement, on the ground that the knowledge that he had become infected with syphilis interfered with his practice to such an extent that he was not able to earn half as much as formerly. The accident company refused his claim, saying that it was prepared to allow him full pay for as many days as he should be confined to bed, but more than this it would not do. The medical man has accordingly taken the case into court, which is expected to be guided by the opinion of a member of the Forensic Medical Council.

June 16th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Swiss Neurological Society.

A MEETING of the Swiss Neurological Society took place in Freiburg last month. The lively interest which medical men in Switzerland take in neurology is evidenced by the fact that this society, of only five years' standing, numbers 135 members and that seven new members were added at the meeting. The society has undertaken to organise the International Congress for Neurology, Mental Disease, and Psychology for 1914, which will take place at Bern from Sept. 7th to 12th. Dr. von Muralt (Davos) spoke at length on the nervous and mental symptoms in tuberculous subjects. Dr. de Montet (Vevey) referred to an interesting case of lesion of the right side of the cerebellum. Professor Dubois (Bern) read a concise paper on the rôle that emotion plays in the genesis of psychic disturbances. Dr. phil. Leclère (Freiburg) pleaded that Professor Dubois's re-educational methods, which have proved so successful in abnormal subjects, should find an application in the education of normal and slightly abnormal children. He referred to good results obtained in some Swiss and Italian homes for destitute children. Dr. von Köhler (Geneva) spoke on the theory of dissociation in neuropathology on Freudian lines.

The Epidemiology of Diphtheria.

Dr. R. Klinger, of the Institute of Hygiene in the University of Zürich, which is under the charge of Professor Silberschmidt, in a recently published report, maintains that bacteriological examinations should be made not only in all cases clinically diagnosed as diphtheria, but also in all suspicious cases. If diphtheria bacilli are found further examination of other members of the household, school, or institution are desirable. Carriers of diphtheria bacilli should remain isolated as long as infectious, and special hospital accommodation should be provided for such cases. In Zürich for the last eight years the State (Canton) pays for all bacteriological examinations, and this rule should apply to the whole of Switzerland. Some details Dr. Klinger publishes are of general interest. The decrease in the mortality-rate from diphtheria has been considerable between 1880 and 1910, it having fallen from 8 to 1½ per 10,000. Whereas the mortality had reached 3 in 1888, it suddenly increased in the following eight years to 4½ and even for one year to 6½; it has, however, continued fairly stable at 1½ for the last eight years. Investigations in schools and homes are of the greatest importance when isolated cases of diphtheria occur. This is evidenced by the following facts. In a school of 49 pupils in which 7 cases of diphtheria had occurred 5 children were discovered to be bacilli carriers; in another class of 42 8 pupils were infectious. In a home for epileptics, with 264 inmates, in which only a few slight cases of diphtheria were observed, 23 carriers of bacilli were discovered.

Zürich Sanatorium for Consumptives.

The annual report for 1912 for the Zürich sanatorium for consumptives contains the following details. Whereas the death-rate from tuberculosis in Switzerland has decreased during the last nine years from 18·7 to 16·1, the decrease for the canton of Zürich has been more marked, as it has fallen from 18·6 to 13·9. Doubtless the considerable number of annual cures is already beginning to tell on the death-rate. A large number of patients, especially those treated in the first stage of pulmonary tuberculosis, remain fit for work for quite a number of years. 418 patients were treated at the sanatorium in 1912, 328 of whom suffered from pulmonary tuberculosis, 23 from tuberculosis of other organs. The average duration of the stay was 158 days. 44 per cent. belonged to the first stage, 23 per cent. to the second, 33 per cent. to the third. 80 per cent. derived benefit. Only seven cases were treated with tuberculin.

June 12th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Maternity Bonus.

IN my last letter I referred to the legal proceedings to be taken against two nurses on a charge of making false returns under the Maternity Bonus Act. On April 19th the detective police in charge of the matter arrested, in connexion with the same charge, a middle-aged medical man who has been known as a city practitioner in Melbourne for some years.

Health of Perth.

The annual reports of the medical officer and his chief inspector state that typhoid fever showed an increase for 1911–12 of 275 cases, as against 161 the previous year. They remark that the increase is no doubt due to the disturbance of the soil in all directions by the sewerage scheme, and that in Perth typhoid fever disappears rapidly after heavy rain.

Brisbane Hospital.

The annual meeting of supporters of this institution was presided over by the Governor of Queensland, Sir William MacGregor, who is himself a medical man. During the past year 4664 in-patients and 8689 out-patients had received treatment. The committee announced that many improvements in building and equipment were needed and that some were already in hand. It was proposed to spend £14,000, and of this sum £8000 were required to be raised by public subscription.

Pharmacists and Lodges.

A movement has lately been made in Victoria by the members of the Pharmaceutical Society against the lodge dispensaries. The pharmacists complain that these dispensaries sell dressings and toilet articles and surgical appliances at rates with which the shops cannot compete, and that there is no effective control to secure that sales are made only to *bonâ fide* members of the Friendly Societies. The societies have arranged to hold a conference on the subject with representatives of the pharmacists.

Phthisis in Victoria.

Some interesting figures are given by the Victorian Government statist (Mr. A. M. Laughton) in the Year Book for 1911–12 just issued. He states: "The deaths from phthisis in 1911 numbered 1108—598 being of males and 510 of females—and equalled a rate of 839 per million of the population, as compared with rates of 830 in the previous year, 848 in 1909, 955 in 1908, 958 in 1907, and 1134 in 1890–2." Later he writes: "The proportion of the residents of any large area which is affected by pulmonary tuberculosis represents fairly closely the degrees of infection of that centre. Such proportions have been computed for five divisions of this State on the experiences of the two and a half years ended June, 1911. During that period 1912 residents of Greater Melbourne, 137 of Ballarat and suburbs, 347 of Bendigo and suburbs, 71 of Geelong and suburbs, and 731 of 'rest of State' contracted the disease. Comparing these numbers with the respective populations it is found that of every 10,000 persons, 13·1 in Greater Melbourne, 11·6 in Ballarat, 31·6 in Bendigo, 10·2 in Geelong, and 4·9 in 'rest of State' contracted tuberculosis of the lungs in each year. ..... Particulars regarding the time which elapsed between the beginning of pulmonary tuberculosis and the date at which a medical practitioner was consulted show that of the total patients about 1 in every 8 received advice within three months, and slightly less than 1 in 3 within six months, while about one-half were medically advised within 12 months from the commencement of the disease."

Fairfield Fever Hospital.

As a result of the recent inquiry into the conduct of this institution the Government has decided to have direct representation on the management.

Personal.

Dr. T. W. Sinclair, who has been assistant officer of health in Sydney for some years, has been appointed health officer of the city of Melbourne, and has taken up the work.—Dr. W. K. Norris, who recently resigned the post of Director-General of Federal Quarantine, has sailed for London, where he will enter upon the duties of Commonwealth medical officer in charge of the medical inspection bureau to be established.

The Northern Territory.

An important document, the full text of which is not yet available, is the report made to the Minister for Home Affairs by Dr. M. J. Holmes, medical officer to the territory, on the climatic and hygienic outlook in the Northern Territory of Australia. Dr. Holmes states that there is an absence of any of the virulent tropical diseases, and that the most formidable contagious diseases are those introduced by all civilisations. The climate is equable, and if moderation in living be observed there is nothing unhealthy in the environment. White women can and do live comfortably, and there is no reason why a male working population should not be accompanied by their wives and families. The great need at present is means of communication by which the country may be opened up, and once this is assured there is nothing in the climatic conditions to deter white people from living there in health and comfort.

May 7th.

CENTENARIANS.—John Ryan, residing in Mainstone-avenue, Plymouth, celebrated the anniversary of his 104th birthday on June 10th. Mrs. Rebecca Clark, of Wood Green, reached the age of 109 years on June 9th. She married 90 years ago, and has brought up nine children. She enjoys good health, and attributes her long life to retiring early to bed, getting up early, and hard work

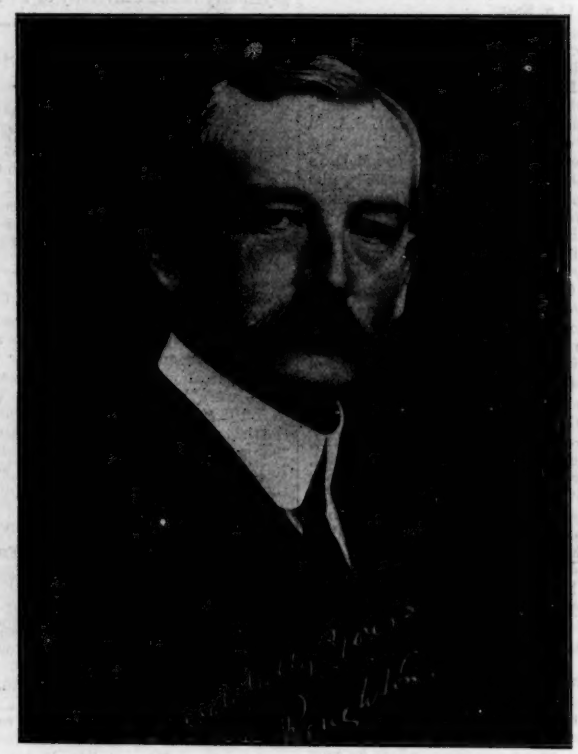
Obituary.

EDMUND WILKINSON ROUGHTON, M.D., B.S. LOND., F.R.C.S. ENG.,

SURGEON TO THE ROYAL FREE HOSPITAL; LECTURER ON SURGERY TO THE LONDON SCHOOL OF MEDICINE FOR WOMEN.

WE announced last week the death, at the early age of 50, of Mr. Edmund Wilkinson Roughton, surgeon to the Royal Free Hospital, which occurred on June 10th at Lauderdale Mansions, Marylebone, for he had given up his residence in Queen Anne-street, W., several months ago and retired from practice.

Mr. Roughton, who was the son of a naval officer, was educated at St. Bartholomew's Hospital and at the University of London. He took the Membership of the Royal College of Surgeons of England in 1883, and afterwards had a notably brilliant career as a student, obtaining the gold medal for medicine at the final examination for the M.D. Lond. degree, the gold medal in obstetric medicine at the examination for the M.B. degree, and the gold medal in surgery and the University scholarship at the examination for the B.S. degree, a collocation of honours that must be very hard to parallel. After holding the usual junior appointments at St. Bartholomew's Hospital he took the Fellowship of the Royal College of Surgeons of England in 1886, and was appointed assistant demonstrator of anatomy at his hospital. In 1890 he became demonstrator of anatomy at St. Mary's Hospital, and later warden of the College at that institution. His connexion with St. Mary's Hospital lasted some six or seven years, but to the profound surprise of all Roughton's friends he was not elected to the post of assistant surgeon. In the meantime he had been appointed assistant surgeon at the Royal Free Hospital, and became lecturer on surgery at the London School of Medicine for Women, and surgeon in charge of the Throat and Ear Department at the hospital. In all these capacities he proved himself an excellent hospital officer, his wide knowledge in every branch of his profession imparting force and authority to his special teaching and writing. As a diagnostician he was often singularly happy in his suggestions as to the nature of the disease in obscure cases, and his recognition of the true principles of treatment was of much value to those medical men who asked for his assistance in treatment. His skill as an operator was far above the average, and this was due in part to his accurate knowledge of anatomy and in part to his manual skill, dependent on a special delicacy of touch. When operating he was never flurried by anything that might happen, and he always proved equal to any emergency that might arise. In operations on the mastoid, on the septum of the nose, and in any operation demanding minute dissection he was seen perhaps at his best.



EDMUND WILKINSON ROUGHTON, M.D., B.S. LOND., F.R.C.S. ENG.

In 1898 he wrote a small book on Oral Surgery, a Text-book of Diseases of the Mouth, which, though designed mainly for the use of dental students—he was visiting surgeon to the National Dental Hospital—was full of information of general value and of modern ideas concerning oral sepsis. Tersely written, its arrangement and classification proved its author's clear head and wide knowledge. He was also the author of an article on diseases of the mouth, jaws, and tongue in the Index of Treatment for 1897, while to our columns he contributed some excellent articles of widely varying interest, notably one on Pott's fracture and a series of lectures on morbid conditions of the mouth.

Dr. Walter Carr, who attended Roughton in his last illness, and was for many years his colleague at the Royal Free Hospital, writes the following appreciation of his dead friend, every word of which shows that Roughton's early death was, indeed, a tragedy: "Roughton was essentially a man who wanted knowing, but the better one knew him the more one learned to appreciate, not only his exceptional abilities, but also his great and sterling qualities. One's first idea of him, perhaps, was that of a man strong both physically and mentally, but stern and somewhat unapproachable, one who lived in a sphere above that of ordinary frail mortals. The standard of duty and of work which he expected from others was a high one, and he did not hesitate to let them know if they failed to reach it. He had a deep and outspoken contempt for anything that savoured of meanness or idleness, for anything which did not attain to the highest level of professional honour. He was eminently a man who could not, and did not, 'suffer fools gladly.' If, however, he was strict, even severe, with others he was still stricter with himself. In whatever he did he gave of his best, and his best was at a very high level indeed. He always set a splendid example in all his professional duties and personal conduct, for his ethical standard was an exceedingly lofty one. No one could conceive of his doing anything underhand or mean. At the Royal Free Hospital his death leaves a blank which cannot be filled for we have lost one of the most striking personalities on the staff, striking alike physically and mentally—a surgeon of unusual ability, a teacher of great impressiveness, a loyal colleague, a wise counsellor, one to whom we could always look when in difficulty for well-considered advice and guidance.

"The real greatness of the man was strikingly shown in his last illness. Nearly a year ago he realised, probably before anyone else did, that his days were numbered, that many possibilities of suffering lay before him, that he was to be cut off in the plenitude of his powers and in the maturity of his mind. Truly he might have said, 'I am deprived of the residue of my years.' But, without hesitation, without a murmur, scarcely speaking to anyone of his impending fate, he calmly went on with his ordinary work. When at last increasing illness compelled him to give up, he earnestly hoped that the end would come quickly, but even this last satisfaction was denied to him, and the strong man was called upon to drain the cup of suffering and of weakness

to its bitterest dregs. Yet throughout it all he never complained, was deeply moved by the practical tokens of sympathy, to him quite unexpected, which his illness brought from old friends, students and colleagues, and was touchingly grateful for the all too inadequate efforts made to smooth his downward path.

"At the funeral service at the hospital we sang 'Now the labourer's task is o'er,' and rarely perhaps have the pathetic lines been more appropriate than in his case, for as we gathered round the coffin we remembered that only a few short months before, in the building in which we were assembled, he had seen his last patient, performed his last operation, delivered his last lecture, and then gone home to await a lingering death. His last effort was devoted, the last work of which he was capable was given to the hospital which he loved so well and served so faithfully, and to the students to whom he has bequeathed so fine an example of professional conduct and of devotion to duty."

GEORGE HENRY ROQUÉ DABBS, M.D., C.M. ABERD., M.R.C.S. ENG.

WE regret to record the death on June 10th at his residence in Westminster of Dr. G. H. R. Dabbs, medical officer to the managers of the London Stock Exchange.

Dr. Dabbs was born in 1846 at Southsea, the son of a naval staff surgeon. At the age of 18 he joined King's College Hospital, and qualified M.R.C.S. Eng. and L.S.A. in 1867. In the same year he obtained the M.B., C.M. degrees at the University of Aberdeen, and proceeded to the M.D. in 1868. After travelling on the continent for a year or two he settled in practice at Shanklin in the Isle of Wight, where he remained for over 30 years. For some time Dr. Dabbs was Tennyson's medical adviser, and he attended the poet through his last illness. He was a J.P. for the county of Southampton. For the past ten years Dr. Dabbs practised at 25, Austin Friars, in the City of London. He had marked literary tastes, and published several books of poems and a number of plays. For some time his heart had been affected, and his sad death from an overdose of chloroform, inhaled for the relief of anginal attacks, formed the subject of a coroner's inquest, which is referred to in another column.

Mr. Macleod Yearsley sends the following appreciation:—"The sudden death of Dr. G. H. R. Dabbs, in circumstances little short of tragic, removes one of the finest types from the profession and loses me and many others a true friend. Dabbs was a man of many parts. He was not only a good doctor, but his literary ability was much above the average, and he was, in addition, possessed of the true poetic spirit. As a friend he was very true and loyal; he could not do a mean action or wittingly hurt even an enemy. As a companion he was most interesting, for he had moved with so many interesting people, to his reminiscences of whom Dabbs imparted additional value by his own individuality. He had, as his physician, been much with Lord Tennyson. But, besides this, he had, as a student, lived with both H. J. Byron and Tom Robertson. He once informed me that he believed himself to be the first person who had heard *Caste* read. 'One evening,' he said, 'Byron having gone out to dinner, Robertson read me the first act of *Caste*. When he had finished Byron returned, and as he was inclined to be noisy we settled him in an armchair, where he went apparently to sleep. At the end of the reading of the second act he opened his eyes and remarked: "Tom, if the first act is as good as the second, that play will *live*."' Dabbs was well known in the Isle of Wight, and many stories of his kindness and also of his astuteness are told there. Perhaps the best, certainly the most characteristic, is one of how he was called into consultation over a hysterical fasting girl, with whom no one could do anything. Dabbs, to the annoyance of all, won her confidence by telling her that she was quite right to refuse to eat. Then he elicited the fact that she suffered from thirst, and casually remarked that milk was the best thirst quencher he knew. He thus obtained her promise to take whatever medicine he sent her, and that medicine consisting of strong brine she improved in health on about 24 glasses of milk a day! Dabbs was always keen on keeping his work up to date, and the profession is poorer by his loss."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. John W. Kyger, professor of children's diseases in the University of Kansas.—Dr. Conrad Gabriel Hällstén, formerly professor of anatomy and physiology in the University of Helsingfors, in the eightieth year of his age. He published a large number of papers dealing with physiological subjects in Finnish and Scandinavian medical journals; also several descriptions of skulls found in Finland and Russia, together with important dissertations on anthropological and ethnological matters.—Dr. A. Bochanek, professor of descriptive anatomy in the University of Cracow.—Dr. Theodor Weyl, lecturer on hygiene in the Charlottenburg Technical School, the well-known editor of the great "Handbook of Hygiene." He was born in 1851, and soon after qualification became assistant to Dr. J. Rosenthal, professor of physiology in Erlangen. He afterwards migrated to Berlin, and worked under du Bois Reymond, Helmholtz, A. W. Hofmann, and Robert Koch. He has held various official positions, and has acted as adviser to the municipal and government authorities on many important questions.—Dr. Antonio Marro, *privat-docent* of psychiatry in the University of Turin.

THE NATIONAL INSURANCE ACT.

GLOUCESTERSHIRE INSURANCE COMMITTEE.

AT the last meeting of the Gloucestershire Insurance Committee it was reported that the number of insured persons in the county is about 95,000, and there are 13,000 of these who have not yet selected their medical attendant. It was stated that 71 medical men had up to 300 names on their panels, 40 between 300 and 600, 10 between 900 and 1200, 10 over 1200, and one practitioner, who employs two assistants, has over 3000.

DEVON INSURANCE COMMITTEE.

At the last meeting of the Devon Insurance Committee it was reported that there was an amply adequate panel of practitioners and pharmacists for the county, consisting of 274 medical men and 178 pharmacists. It was stated that there were 16 insured people on Lundy Island, and that it took 102 capitation grants to cover the cost of one visit to the island. The Committee decided to give Mr. G. Adkins, the medical officer of health of Devon, an honorarium of 100 guineas in recognition of his services in connexion with the Insurance Act.

THE INSURANCE DIFFICULTY IN WALES.

To the Editor of THE LANCET.

SIR,—Under this heading in your issue of June 14th you announce that—

> As was expected, the Welsh county councils and the Association for Erecting a National Memorial to King Edward VII. have failed to agree on the administration of the sanatoriums for tuberculosis under the Act.

Seldom, indeed, is a greater number of blunders found compressed in so short a space.

1. "The" insurance difficulty in Wales has no existence. 2. A failure of agreement between Welsh county councils and the King Edward VII. Welsh National Memorial Association was not "expected." 3. Such a failure has not taken place. 4. There are 17 county councils and county borough conncils in Wales and Monmouthshire; all of these are constituent bodies of the association under the charter; they have taken, and are taking, through their representatives, an active part in the work of the association. 5. Out of the 17 councils only two have under consideration a proposal to formulate a scheme apart from that of the association.

Your paragraph concludes with an equally erroneous statement, viz.:—

> The county councils consider that the association is claiming a position of independence which cannot be sanctioned by the Local Government Board.

When and where and by whom was this alleged view of the county councils expressed?

I am, Sir, yours faithfully,

GWILYM HUGHES,
Secretary, The King Edward VII. Welsh National Memorial Association.

*** This letter arrived as we were going to press.—ED. L.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—As the result of the recent Final Fellowship Examination held on May 22nd, 26th, 27th, 28th, 29th, and 30th, for which 57 candidates presented themselves, of whom 32 passed and 25 were rejected, the Council on June 12th conferred diplomas of Fellow upon the undermentioned candidates:—

Harold Holkar Broome, Captain I.M.S., M.B., Ch.B. Edin., L.R.C.P., M.R.C.S., Edinburgh University and London Hospital; Douglas Compton Taylor, M.B., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital; Arthur Ernest Iles, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Bristol University and St. Bartholomew's Hospital; Henry George Frean, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and London Hospital; Harry Cecil Rutherford Darling, M.D., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital; Reginald Hawksworth Mawhood, B.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Bartholomew's Hospital; Clement Edward Shattock, M.D., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital; Stanley Hoyte, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Westminster and St. Bartholomew's Hospitals; Alexander Croydon Palmer, L.R.C.P., M.R.C.S., London Hospital; Charles D'Oyly Grange, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Leeds University and St. Bartholomew's Hospital; Humphrey Neame, L.R.C.P., M.R.C.S., London Hospital; Dudley Denham Pinnock, M.B. Melb., L.R.C.P., M.R.C.S., Melbourne University, Middlesex and St. Bartholomew's Hospitals; Alan Herapath Todd, B.Sc., M.B., B.S. Lond., L.R.C.P., M.R.C.S., Guy's Hospital; John Ernest Price Watts, L.R.C.P., M.R.C.S., Westminster and St. Bartholomew's Hospitals; Charles Vernon Anderson, L.R.C.P., M.R.C.S., St. Thomas's Hospital; Kenneth James Acton Davis, L.R.C.P., M.R.C.S., St. Bartholomew's Hospital; Norman Francis Lock, M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Thomas's Hospital; Stanley Ritson, B.Sc. Lond., L.R.C.P., M.R.C.S., King's College and St. Thomas's Hospitals; Michael Ernest Theodore Demetrius Vlasto, M.B., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital; Gilbert Charles Chubb, M.B., B.S., D.Sc. Lond., L.R.C.P., M.R.C.S., University College Hospital; Charles Eric Sweeting Jackson, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Mary's Hospital; William Marshall Oakden, B.A. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Thomas's Hospital; Walter Sydney Perrin, M.A. Cantab., L.R.C.P., M.R.C.S., Cambridge University and London Hospital; Philip Ferguson, M.B., Ch.B. Manch., Manchester University and London Hospital; William Gemmill, M.B., Ch.B. Edin., Edinburgh University and St. Bartholomew's Hospital; John Kennedy, M.D., B.S. Melb., Melbourne University and St. Bartholomew's Hospital; Charles Frederick Morris Saint, M.D., M.S. Durh., Durham University; Frederick Glover Neeson Stephens, M.B., Ch.M. Syd., Sydney University, King's College and St. Bartholomew's Hospitals; and John Thompson, B.Sc., M.B., B.S. Lond., M.B., Ch.B. Vict., D.P.H. Lond., Manchester University and St. Bartholomew's Hospital.

Licences to practise dentistry were conferred upon the undermentioned 49 candidates who have passed the requisite examinations and complied with the by-laws:—

Henry Leonard Bailey, Reginald Willis Ballard, and Arthur James Barber, Guy's Hospital; Carl William Reeves Bater, Middlesex and National Dental Hospitals; Kevern Batten, Bristol University; Victor Louis Sydney Beckett, Middlesex and Royal Dental Hospitals; George Frederick Charles and Alan Strafford Clarke, M.A. Cantab., Guy's Hospital; Arthur Coupe, Manchester University; Harry Drake, Leeds University; Arthur Gerald Forrest, Claude Frederick Haine, Samuel Hanreck, Thomas Eric Henderson, Montagu Fred Hopson, and Bernard Isaacs, Guy's Hospital; Benjamin Durrans Johnson, Charing Cross and Royal Dental Hospitals; Theodore Hesketh Jones, Middlesex and Royal Dental Hospitals; Leonard Stanley Kettlewell, Charing Cross and Royal Dental Hospitals; Aurelius Percy George Kincaid-Smith and Roy William List, Middlesex and Royal Dental Hospitals; John Farnham Mace, Birmingham University; Gerald Struan Marshall, Charing Cross and Royal Dental Hospitals; Archibald Daniel Marston, Guy's Hospital; William Henry Matthews, Liverpool Dental Hospital; John Dudley Melhuish, Bristol University; Frederick Humble Morrell, Donald Bernard Morrish, Frederick James Neal, Wilfrid Guy Stuart Neely, and William John O'Kane, R.D.S. New Zealand, Guy's Hospital; Arthur Leslie Packham, Middlesex and Royal Dental Hospitals; Harold Robert Parkes, Liverpool University; Harold Neish Purdom, Guy's Hospital; John Hargrave Rhodes, University College and National Dental Hospitals; Harold Robert Rivers-Cole, Middlesex and National Dental Hospitals; William Owen Roberts, M.R.C.S., L.R.C.P., Guy's Hospital; Arthur Pomroy Sainsbury, Middlesex and Royal Dental Hospitals; Archibald Frazer Salsbury and Edward Royston Saul, Guy's Hospital; Francis Henry Smith, B.A. Cantab., St. George's and Royal Dental Hospitals; Claude Hamilton Stainer, Guy's Hospital; Harold John Stickland, Charing Cross and Royal Dental Hospitals; Frank Bedford Stradling, Cecil Ernest Thomas, Guy's Hospital; Arthur White, M.R.C.S., L.R.C.P., St. Thomas's and Royal Dental Hospitals; Reginald Wallace White, Middlesex and Royal Dental Hospitals; and Edgar Roskelly Williams and Leonard Duncan Windemer, Guy's Hospital.

The diploma of Member was conferred upon Michael Joseph Cronin, London Hospital, who has now complied with the necessary by-laws.

VICTORIA UNIVERSITY OF MANCHESTER.—The following candidates have been approved for the degree of M.D.:—

* Daniel Dougall, † Harold Heathcote, † C. B. Marshall, † A. B. Smallman, A. G. Bryce, F. M. Rodgers, and Alwyn Wharton.

* Awarded Gold Medal. † Commendation.

Degrees in Medicine for both Doctors and Bachelors will be conferred on Saturday, July 5th.

FOREIGN UNIVERSITY INTELLIGENCE.—*Algiers:* Dr. Viguier has been appointed Professeur Agrégé of Parasitology and Natural Sciences Applied to Medicine.—*Berlin:* Dr. Georg Bernhardt, assistant in the Institute for Infectious Diseases, has been appointed Bacteriologist to the Friedrichshain Hospital, in succession to Dr. Wolff-Eisner; Dr. Oestreich has been appointed Lecturer on Anatomy and Physiology to Dental Students; and Dr. Ernst Friedberger has been appointed to the charge of a Department in the Institute of Pharmacology.—*Bordeaux:* Dr. Dubreuil has been appointed Professeur Agrégé of Histology; Dr. Faugère has been appointed Professeur Agrégé of Midwifery; and Dr. Jannin has been appointed Professeur Agrégé of Parasitology and Natural Sciences Applied to Medicine.

ROYAL MEDICAL BENEVOLENT FUND.—At the May meeting of the committee 36 cases were considered and grants amounting to £300 made to 30 of the applicants. Appended is an abstract of the cases relieved:—

Wife, aged 48, of L.R.C.P., L.R.C.S. Edin. No income, and since her husband broke down mentally six years ago has endeavoured to support herself by taking boarders. Two sons, aged 20 and 17, who will, it is hoped, soon be able to give slight assistance. Relieved three times, £45. Voted £15.—Daughters, aged 54 and 47, of late M.D. Aberd. Each has an income of about £20 a year, but is unable to supplement it owing to permanent ill-health. Voted £5 each.—Widow, aged 42, of M.R.C.S., L.R.C.P. Practically unprovided for at husband's recent death, but having many friends in the neighbourhood hopes to maintain herself by receiving boarders. Three children, aged 15½ to 2. Voted £10.—M.R.C.S., aged 73. Incapacitated by paralysis, and practically destitute. No children. Voted £20.—Widow, aged 58, of M.R.C.S. Supported herself for some years by designing lace, but is now incapacitated by an incurable complaint. No children. Voted £10.—Widow, aged 62, of M.D. Aberd. Only certain income £12 a year; no children. Voted £12.—Daughter, aged 43, of late M.B. Lond. Was partially provided for, but lost her capital through unfortunate investments, and is now without any means. Receives a home in return for services, but being in bad health is unable to obtain a salary. Voted £5.—Daughter, aged 36, of late M.R.C.S. Has been a clerk at a large draper's, but left through no fault of her own, and has quite exhausted her small savings. Voted £5, with leave to apply again if necessary.—Daughter, aged 85, of a surgeon in practice before 1815. Only income a pension of £13 a year. Voted £12.—Widow, aged 42, of L.R.C.P., L.R.C.S. Edin. No income; tries to support herself by nursing, but finds it impossible to obtain regular work. Two children, aged 18 and 9, the elder just self-supporting. Relieved seven times, £55. Voted £5.—Daughter, aged 58, of L.R.C.P. Edin. Exhausted small savings in the attempt to establish a small business, and now dependent on a weekly allowance from a friend and small earnings by needlework. Relieved eight times, £64. Voted £10.—Widow, aged 79, of L.R.C.P. Edin. Only income an old age pension. Husband was an Epsom pensioner. Relieved once £12. Voted £12.—Widow, aged 50, of L.R.C.P. Edin. No income; slight help from two sons who are sailors. Relieved nine times, £99. Voted £12.—Daughter, aged 74, of late M.R.C.S. No income and entirely dependent on uncertain help from relations. Relieved once, £12. Voted £12.—Daughters, aged 66 and 63, of late M.R.C.S. Have a small income from a house, but at present it all has to be paid away for repairs which were necessary to secure a tenant. Relieved once £12. Voted £10.—L.R.C.P., L.R.C.S. Edin., aged 53. Has been paralysed and nearly blind for the last five years, and is entirely dependent on his wife's earnings by letting lodgings. Five children, aged 18 to 13. Relieved five times, £90. Voted £18.—Daughter, aged 67, of late M.R.C.S. Income reduced to a few shillings a week through the failure of the family solicitor, and is now broken down in health. Relieved once, £5. Voted £5.—Daughter, aged 58, of L.F.P.S. Glasg. Only income £1 a month from a society and physically incapable of earning a living. Relieved six times, £70. Voted £10.—Widow, aged 64, of L.S.A. Practically dependent on lodgers, and has had three rooms unoccupied for several months. Relieved 11 times, £120. Voted £10.—Daughter, aged 61, of late M.R.C.S. Only income a pension of £20 a year; health delicate and sight greatly impaired. Relieved once, £12. Voted £6.—Daughter, aged 57, of late L.R.C.P. Edin. Has been in bad health for several years and requires help for unavoidable expenses consequent upon a recent operation. Relieved eight times, £76. Voted £5.—Widow, aged 54, of L.R.C.S. Edin. No income, and requires help during convalescence after a severe operation. Relieved twice, £24. Voted £12.—Daughter, aged 64, of late L.S.A. Used to support herself by teaching, but lost her pupils during a long illness which preceded her mother's death. Only income a pension of £21 a year. Voted £10.—Daughter, aged 74, of late M.R.C.S. Maintained herself for many years as a housekeeper, but is now dependent on an old age pension. Voted £12.—Widow, aged 54, of L.F.P.S. Glasg. Slight help from children and small earnings by letting rooms. A daughter, aged 18, has been seriously ill for the past 12 months. Relieved nine times, £94. Voted £12.—Wife, aged 45, of L.R.C.S. Irel. Husband was obliged to give up work 18 months ago owing to a complete breakdown in health, but is now sufficiently recovered to make a fresh start and hopes to build up a small practice. Three children, aged 18 to 11, for whose benefit some money is invested on trust. Relieved once, £12. Voted £6.—Widow, aged 52, of M.R.C.S. No income; small earnings from crochet and needlework, and lives rent free in return for slight services.

Two children, just self-supporting. Relieved 12 times, £115. Voted £9.—Widow, aged 42, of L.R.C.P. Edin. Has an income of about £1 a week, but having seven children, the youngest only 2½ years old, is unable to supplement it in any way. Relieved once, £12. Voted £12.—Widow, aged 56, of L.R.C.P. Edin. Endeavours to maintain herself by taking boarders, but finds great difficulty in obtaining them. No children. Relieved twice, £10. Voted £5.—Widow, aged 56, of M.R.C.S. Only income a pension of £26 per annum; children unable to help. Was assisted several times by this Fund when a young widow, but has not applied for 19 years. Voted £10.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

RESEARCH DEFENCE SOCIETY.—At the annual general meeting of this society to be held on Tuesday next, June 24th, at 5 o'clock, at the Royal College of Physicians, London (as already announced in THE LANCET), the chair will be taken by Sir David Gill, K.C.B., F.R.S., President of the society. The report will be presented by the Hon. Sydney Holland, chairman of committee. Other speakers will be Sir William Osler, Regius professor of medicine at Oxford; Bishop Frodsham, sometime Bishop of North Queensland; Mr. Waldorf Astor, M.P.; and Sir Hugh Bell.

ROYAL SOCIETY OF ARTS.—The conversazione of the Royal Society of Arts was held on June 17th at the Natural History Museum, South Kensington, with a very full attendance. Lord Sanderson, G.C.B., K.C.M.G., the Chairman, with other members of the council, received the guests in the Central Hall, where the Royal Artillery band gave a concert. Other concerts were given by the string band of the University of London Officers Training Corps in the Reptile Gallery, and a vocal concert, under the direction of Mr. Smallwood Metcalfe, in the Shell Gallery. The Central Hall, North Hall, Bird Gallery, Reptile Gallery, Starfish Gallery, and Shell Gallery were thrown open to the inspection of the guests. Exhibits of special interest were that of an enlarged model of the plague flea and the recently discovered skull and mandible of a primitive human being from Piltdown Common, Sussex. The conversazione was a successful and delightful function.

LADIES' MEDICAL GOLFING SOCIETY.—The Ladies' Medical Golfing Society was instituted in 1911, and a meeting is held every year, when the Challenge Bowl presented by Mr. Canny Ryall is competed for, 18 holes medal round. This year the annual meeting will take place at West Drayton on Wednesday next, June 25th. The captain is Mrs. Charles Ryall, and the honorary secretary is Mrs. Creasy, with Mrs. Lewis Smith and Mrs. Herbert Tilley on the committee. On June 11th a match was played at Northwood between "Medical Ladies" and "Legal Ladies," and was won by the former. The scores were as follows:—

Medical.		Legal.	
Mrs. Laming Evans	1	Mrs. Gunby Hadath	0
Mrs. Lewis Smith	½	Miss Joan Elliott	½
Mrs. Storry	0	Mrs. Pell-Smith	1
Mrs. Yates	0	Mrs. Boyce	1
Mrs. McNab	1	Mrs. Steedman	0
Mrs. Charles Ryall	1	Mrs. Church Bliss	0
Mrs. Herbert Tilley	1	Mrs. Plummer	0
Mrs. Charlton Briscoe	0	Mrs. Orr	1
Total	4½	Total	3½

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Select Committee on Patent Medicines.

THE Select Committee of the House of Commons which is considering the subject of the sale and advertisement of patent medicines concluded taking evidence on Thursday, June 12th. It has been sitting for a year. It will now prepare its report.

Dr. W. K. NORRIS, the chief medical officer to the Commonwealth of Australia in London, was the last witness, and he gave evidence to supplement statements on the subject of Australian legislation made earlier in the inquiry. He stated that a strict control was exercised over patent and proprietary medicines imported into the Commonwealth. All literature accompanying these articles was carefully scrutinised, and unless it was of an unobjectionable nature admission was refused to the preparations. Declarations in regard to the medicines themselves were required, and in certain cases the disclosure of the therapeutic agents had to be made on labels.

Witness stated in cross-examination that certain articles which had been excluded from importation had afterwards been manufactured in the country. He admitted that some amendment of the Australian law was desirable to put an end to this state of things.

Mental Deficiency Bill.

A Standing Committee of the House of Commons commenced the detailed consideration of the Mental Deficiency Bill on Thursday, June 12th. The first clause presents a classification of feeble-minded persons to whom the Bill is applicable. Mr. MARTIN proposed as an amendment to omit the subsection which brought within the Bill persons in whose case there existed from birth or from early age mental defectiveness not amounting to imbecility, yet so pronounced that they required care, supervision, and control. He characterised this provision as tyrannical. Mr. MCKENNA, the Home Secretary, strongly resisted the amendment and repudiated the idea that the Bill had the harsh character which had been imputed to it. The amendment was negatived. After some discussion the clause was agreed to.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 11TH.

Capital Grants for Tuberculosis.

Mr. ASTOR asked the President of the Local Government Board how much of the capital grant made available by the Finance Act, 1911, for providing institutions for the treatment of tuberculosis had already been spent in England on providing new tuberculosis dispensaries and new sanatoria and hospitals for the treatment of tuberculous patients respectively, and whether he would give the names of those authorities who had already spent this money.—Mr. BURNS replied: Capital grants amounting to £11,491 have been made to authorities in England in aid of expenditure already incurred in providing tuberculosis dispensaries and sanatoria for the treatment of tuberculosis. These grants have been paid to the county council of Devon and the corporations of Birkenhead, Birmingham, Eastbourne, and Leicester. Further grants amounting to £36,900 have been promised to various authorities in aid of expenditure already incurred or now being incurred, and large capital grants have also been promised to more than 50 other authorities whose schemes have been approved by the Board. The whole capital grant available for England has been provisionally allocated to counties and county boroughs on the basis of population.

Medical Benefit and Aged Persons.

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury whether the reserves necessary to give medical benefit to insured persons over the age of 70 were being accumulated; and, if so, whether by the insurance committees or by the approved societies.—Mr. MASTERMAN answered: The actuarial calculations allow for the accumulation of the necessary reserve to provide medical benefit for surviving members of approved societies entitled to it after the age of 70. The reserve is therefore being accumulated out of the ordinary contributions received by societies in respect of their insured members.

Deaths from Privation.

Mr. HILLS asked the President of the Local Government Board what was the number of deaths in 1912 in England and Wales and how many in the metropolis upon which a coroner's jury returned a verdict of death from starvation or death accelerated by privation; when he would publish that return; how many of the like deaths took place in the first three months of the present year; how many of such persons dying in 1912 and how many of those dying in the first three months of 1913 were in receipt of old age pensions; what steps, if any, the Local Government Board and their inspectors had taken to reduce the number; and whether the Local Government Board would in future send down inspectors to see the relieving officers and guardians and thoroughly to investigate the cases and endeavour to find remedies.—Mr. BURNS replied: 98 cases were reported by coroners in 1912, of which 40 were metropolitan and 58 provincial cases. Three of the 98 persons were old age pensioners. The annual return will be published in due course, but all the necessary particulars are not yet available. So far information of four cases occurring in 1913 has been received, one of which is the case of an old age pensioner. Whenever it appears to be necessary the inspectors of the Local Government Board will confer with the Poor-law authority and their officers upon these cases, but there is no reason to doubt that Poor-law authorities are fully alive to the importance of the matter.

Sight Tests in the Mercantile Marine.

Replying to Mr. LYNCH, Mr. J. M. ROBERTSON (Parliamentary Secretary to the Board of Trade) wrote: The following are the statistics desired as to failures of certificated officers to pass the new colour-vision tests during the two completed months April and May that they have been in operation. The total number of officers in possession of certificates of competency who were examined in the above tests during the period April 1st to May 31st is 409. Failed in lantern test only: Six certificated officers failed in both local and special examinations; two failed in local examinations, but special examinations have not yet been held. Failed in wool test only: None. Failed in both lantern and wool tests: Three certificated officers failed in both local and special examinations; one has failed in the local examination, but has not yet been specially examined. Thus nine certificated officers have failed to pass the new tests; and three having failed at local examinations are awaiting special examinations before a final decision is given.

Sanatorium at Rosslare.

Mr. FETHERSTONHAUGH asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state when and by whom was Rosslare, county Fermanagh, selected on behalf of the Women's National Health Association as a suitable site for a sanatorium; what medical advice, if any, was taken; did Dr. Brendan M'Carthy report on it, and at whose instance did he report; was Rosslare ever reported on by any of the medical committee of supervision of the Women's National Health Association; and, if so, by whom and on what date or dates.—Mr. BIRRELL (in a written answer) replied: An application for the approval of Rosslare as a sanatorium under Section 16 (1) (*a*) of the National Insurance Act was made by the Women's National Health Association to the Local Government Board. The place had previously been visited by Sir William Thompson, the treasurer of the association, and a favourable report had been obtained from an architect whose suggestions as to improvements have been carried out. By the direction of the Board, one of its medical inspectors, Dr. Brendan M'Carthy, visited Rosslare, and, after personal inspection, recommended the approval of the sanatorium temporarily

for a specified number of patients. Dr. M'Carthy is a medical inspector of great experience and is fully qualified to report on the points referred to him in connexion with Rosslare sanatorium. The application for the Board's sanction was made on the responsibility of the Women's National Health Association, which had satisfied itself that the site was suitable for a sanatorium from a medical point of view.

Mr. FETHERSTONHAUGH asked the right honourable gentleman whether he would state at whose instance was Rosslare, county Fermanagh, approved as a site for a sanatorium by the Local Government Board; was the attention of the Local Government Board called to the fact that it was a very cold exposed place, destitute of shelter, and situated on a heavy clay soil, and that the place had been a failure as a sanatorium before; were the Board put in communication with several medical men who had been connected with the former sanatorium, and was there any reason for its being now sanctioned as a sanatorium, except that Lady Aberdeen, on one hurried visit to the place on a fine summer day, admired the view and urged its selection as a sanatorium; and was the nearest available doctor resident some eight miles away.—Mr. BIRRELL wrote in reply: As stated in answer to the previous question, the Local Government Board, in sanctioning Rosslare temporarily as a sanatorium, proceeded on an application made on behalf of the Women's National Health Association and on a report from the Board's inspector, whose duty it was to investigate the suitability of the site. The Board was aware that the place had not been a financial success when run as a private sanatorium, but had no knowledge of the reasons for this failure. I understand that the demands for admittance to the institution are now in excess of the accommodation, and that a number of the patients have greatly improved. The medical officer of the sanatorium resides at Enniskillen, about eight miles away, but he is in telephonic communication with Rosslare and has a motor-car.

THURSDAY, JUNE 12TH.

Sir Victor Horsley and the Home Secretary.

Lord ROBERT CECIL asked the Secretary of State for the Home Department whether he would lay upon the table of the House a copy of the complaint which he had made to the Royal College of Surgeons against Sir Victor Horsley.—Mr. MCKENNA said in reply: Personally, I should have no objection to laying upon the table of the House a copy of my communication to the Royal College of Surgeons, but it is a matter for their discretion whether or not it should be communicated to Sir Victor Horsley or made public.

Lord ROBERT CECIL: May I ask why this is a matter within the discretion of the Royal College of Surgeons, since the complaint emanated from the right honourable gentleman himself, and whether he can refer me to any precedent of a complaint being made by a Government department against a professional authority which has not been communicated to the person indicated?—Mr. MCKENNA: All the facts, I assume, have already been communicated to Sir Victor Horsley by the Royal College of Surgeons.

Lord ROBERT CECIL: In what terms?—Mr. MCKENNA: The facts, as I explained in a previous answer, were already known to Sir Victor Horsley, and the complaint, as it is called, contained no new charge nor any charge at all against Sir Victor Horsley. What has happened is this. Sir Victor Horsley made certain complaints against several members of the Royal College of Surgeons, and I, in this House, denied the justice of those complaints, and I have forwarded Sir Victor Horsley's charges with the documents which I quoted in my answer given in this House.

Lord ROBERT CECIL: Why should that be done?—Mr. MCKENNA: Having sent the correspondence and the statements to the Royal College of Surgeons, surely it is within their province to decide whether they will make them public or not. I have merely called their attention to the documents and the statements, every one of which has already been published.

Milk and Dairies Bill.

Mr. ASQUITH (the Prime Minister) informed Mr. CHARLES BATHURST that the Government would be glad to carry the Milk and Dairies Bill through this session, but unless it could proceed as substantially an uncontentious measure he was afraid that there was little prospect of carrying it in the time at the disposal of the Government.

National Insurance Act Amendment.

Mr. ASQUITH stated, in reply to Sir PHILIP MAGNUS, that it was still the intention of the Government to send to a Standing Committee the Bill to amend the National Insurance Act.

The National Insurance Act and Malingering.

Mr. MASTERMAN, replying to Mr. GODFREY LOCKER-LAMPSON, said: It is too early at present to make any generalisation as to the actual claims for sickness benefit in comparison with the actuaries' estimates. I have seen a report of a meeting of the Kent Insurance Committee wherein it was stated that the rate of sickness experienced was more than double that expected in certain areas, but I am not aware that any general official statistics were available. As was to be expected, there is evidence that the claims on some societies and in some districts are above the normal, but such evidence as is at present available for the country as a whole does not point to any general excess over the actuarial expectations. The primary responsibility for checking malingering must, of course, rest upon the Approved Societies who administer the sickness benefit. The whole question, however, including the appointment of medical referees, is now receiving the most careful attention of the Insurance Commissioners who are obtaining information as to the character and extent of the problem.

Inspectors of Pharmacies.

Mr. TYSON WILSON asked the Secretary to the Treasury (1) whether any decision had been come to regarding the appointment of inspectors of pharmacies; (2) whether the auditors appointed to audit the accounts sent in by chemists who had supplied medicine under the provisions of the National Insurance Act would have to possess a special knowledge of the price of drugs and the business of a chemist.—Mr. MASTERMAN answered: The matters referred to in the two questions are under consideration, but I am not yet in a position to make any announcement in regard to them.

Bovine Tuberculosis.

Answering Mr. CHARLES BATHURST, who asked how certain cases of bovine tuberculosis were to be distinguished when the owner did not consent to the application of the tuberculin test, Mr. RUNCIMAN (President of the Board of Agriculture) said: No case of difficulty in making a differential diagnosis between tuberculosis with emaciation and Johne's disease has been brought to my notice, but I am advised that the following method may be used for distinguishing the two diseases—namely, by clinical examination and, if necessary, microscopic examination of scrapings of the mucous membrane of the rectum, or by microscopic and biological examination of the fæces. With regard to the latter part of the question, I would point out that, whilst it is, of course, the case that owners of cows may not be able to notify cases of cows giving tuberculous milk from clinical symptoms, local Acts are already in existence under which cases may be found and dealt with even before the machinery is made generally applicable by the passing of the Milk and Dairies Bill.

Mr. BATHURST: Is it not a fact that the machinery of the Tuberculosis Order, so far as tuberculous milk is concerned, will break down almost entirely in the event of the Milk and Dairies Bill not passing into law?—Mr. RUNCIMAN answered: I am afraid that I cannot admit that. It is true that if the Milk and Dairies Bill is not passed into law these regulations will not be generally applicable, but will be applicable only in the most important cases.

Answering Mr. BATHURST, Mr. RUNCIMAN wrote that the number of cattle notified to the Board of Agriculture and Fisheries under the Tuberculosis Order of 1913 during the month of May as suffering from tuberculosis of the udder, tuberculosis with emaciation, or giving tuberculous milk, was as follows: in England, 504; in Wales, 13; in Scotland, 51. No notification of tuberculosis was received by the Board during May from 12 counties in England, 9 in Wales, and 24 in Scotland. However, two of those counties in England, two in Wales, and one in Scotland had sent notices in June. He was making inquiries whether in any of those counties there had been unreasonable delay in enforcing the Tuberculosis Order.

The House Fly as a Carrier of Disease.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether his attention had been called to the expression of opinion on the part of several leading scientists that the house fly was the medium of conveyance of much infectious disease, and whether his department proposed to take any action in the matter.—Mr. BURNS said in reply: Under the Public Health Acts local authorities have powers with respect to the removal of refuse and for dealing with accumulations of manure and other offensive matters. They are also empowered to make by-laws relating to the deposit and removal of refuse, and by-laws of this kind are in force in many districts. The question of the relation between flies and disease has been frequently under the consideration of the Local Government Board, who have made and are continuing a series of investigations in regard to it. In August, 1911, in their circular to local authorities on the prevalence of epidemic diarrhœa amongst children, the Board emphasised the importance of prompt removal of stable and domestic refuse and the prevention of the accumulation of organic matters. I have reason to think that this circular led to much valuable work being done, and I am considering the question of issuing a further circular this summer.

Mental Deficiency Bills.

Mr. MASTERMAN stated, in answer to Mr. SHEEHAN, that the Exchequer contribution to relieve local authorities in England and Wales of part of the additional burden placed upon them by the Mental Deficiency Bill was limited to £150,000. The corresponding limit under the Mental Deficiency (Scotland) Bill was £20,000.

Dental Inspection of Irish School Children.

Mr. BIRRELL, in answer to Mr. KERR-SMILEY, wrote that he was informed by the Commissioners of National Education in Ireland that £7236 17*s.* 6*d.* were returned to the Exchequer out of the vote for 1912-13 for the purposes of dental inspection in schools. A sum of £276 12*s.* 6*d.* was locally raised for that purpose. Amongst the places to adopt schemes of dental inspection of children in national schools were Dublin, Belfast, Limerick, Cork, Antrim, Naas, and Galway.

Medical Service in Central Africa.

Mr. GRANT asked the Secretary of State for the Colonies how many district residents, assistant residents, and district doctors were married in the following comparatively unhealthy stations in British Central Africa: Port Herald, Chiromo, Limonde, Fort Johnston, Kotakota, Chinteche, and Karonga; and how many district residents, assistant residents, and district doctors were unmarried in the following comparatively healthy stations: Zomba, Chirazulu, Blantyre, Neno, Nehen, Dedza Llongar, Dowa, and Mzimba.—Mr. L. HARCOURT (in a written answer) replied: According to my latest information at the stations mentioned as unhealthy there are eight married and seven unmarried administrative and medical officers. At the stations mentioned as healthy there are ten unmarried and nine married officers of these classes. At two other healthy stations, Atlanje and Ngara, the two administrative officers and the medical officers are all married, but I am not prepared, without reserve, to accept the honourable Member's classification of stations as healthy and unhealthy.

Local Government Board Administration.

The House went into committee of supply on a vote of £185,988 for salaries and expenses of the Local Government Board.

Mr. WALTER LONG moved the reduction of the vote by £100 and called attention to the administration of the Housing Acts by the Local Government Board.

After some discussion,

Mr. HERBERT LEWIS (Parliamentary Secretary to the Local Government Board) dealt with the question of water-supplies. He said that the Local Government Board lost no opportunity of impressing on local authorities the absolute necessity of providing an adequate supply of water and a proper system of drainage. The desirability of the Local Government Board undertaking something in the nature of a comprehensive survey of the whole of the water-supplies of the country was a question of great importance. People in this country were becoming cleaner and more hygienic. The number of baths was increasing, and more water was wanted for drainage and the watering of roads. The population was growing and was continually demanding a larger supply of water. The difficulty which would arise, and which had already arisen to a certain extent, and which would be felt with far greater stringency in 20 or 30 years' time was that the water-supply of

the country and the available water resources were fixed, whereas the demand on those resources was continually increasing. The great watersheds which were still available for supplying great towns were continually diminishing in numbers. It was therefore of great importance that the country should have some knowledge as to the extent of the water-supply that was actually available. After the return on this subject was ordered in 1910, the Local Government Board set about preparing the schedules and obtaining information on the subject from the various local authorities. More than 3000 separate returns of the available sources had been received, and the information was now being tabulated. The return for the whole country would show as regarded every water undertaking the place and source of the supply, the nature of the works, the quantity and quality of the water-supply, the area, the population, and the number of houses in every district and parish in England and Wales, the number of houses supplied from height services, and other matters. This return was now in the printer's hands, and he believed that it would be found of very considerable value. The Local Government Board was inspecting all the information in the return which bore on the subject of underground water, a matter of very considerable importance, and was dividing the water among the different geological formations, and was also drawing up a return of the amount of water drawn by public undertakings from each geological formation. A memorandum would be prepared which he trusted would give the public some very useful information in regard to water-supplies. Last year a Bill had been introduced for the purpose of overcoming difficulties which local authorities had experienced in acquiring water rights which under the law as it stood could not be taken compulsorily. It had met with opposition, but he was not without hope that it would be passed in the course of the present session. The work which the Local Government Board had been doing would be extremely valuable in the future, and it was absolutely essential to any general survey of the water-supplies of the country.

Mr. ASTOR said that sanatorium benefit for tuberculosis, whether domiciliary or institutional, depended on the Local Government Board for its administration. Therefore the President of the Local Government Board was to a very great extent responsible for the present condition of sanatorium benefit. It was no exaggeration to say that at the present time the conditions might be described as chaotic. There was great chaos and dissatisfaction throughout the country. He did not mean to say, dealing for the moment with insured persons, that they were not receiving some sort of sanatorium benefit, but he would emphasise the fact that they were not getting that sort of sanatorium benefit for which they were paying. They were paying to get a particular sort of treatment, and they were not getting value for their money, and in his opinion this was due to a great extent to the President of the Local Government Board. In many cases the persons suffering from tuberculosis were put on the waiting list, whereas they had been promised treatment of the right sort as soon as he case was diagnosed to be suitable for that particular kind of treatment. His charge against the right honourable gentleman was that to a great extent he was to blame, in that he had not given an official strong lead to the local authorities and the Local Insurance Committees, and especially that he had been woefully slow in his administration of the department on this question. He complained of the delay which occurred before the right honourable gentleman in December appointed the London County Council as the central organising authority for London. The right honourable gentleman ought also to have produced his Order approving domiciliary treatment before he did.

Mr. CHAPLIN called attention to the increasing number of exemptions from vaccination in this country. In 1903 there were 37,000 and in 1904 39,000 exemptions. In 1907 the number was 57,000; in 1908 it rose to 162,000, in 1909 to 190,000, in 1910 to 230,000, in 1911 to 248,000, and in 1912 to 276,000. Under the administration of the right honourable gentleman the state of matters had reached the point that nearly one-third of the whole of the coming population at the present time were absolutely unvaccinated.

Mr. BURNS (President of the Local Government Board), replying to the debate, said that he would be glad to do anything he could to safeguard rural water-supplies against being raided unnecessarily by large companies and large towns. The provision of sanatoria in London and elsewhere had been touched upon by the honourable member for Plymouth (Mr. Astor), who said the condition of sanatoria in London and elsewhere was chaotic, and that insured persons did not get the sort of treatment which they were paying for, because the Local Government Board had given no strong lead to the local authorities. The honourable member did admit that the Local Government Board had to contend with enormous difficulties in the duties which it had had to undertake. If the honourable Member had remembered that, the rest of his speech need not have been made. He could only say that the department and the staff who had the sanatoria under their jurisdiction had attended to this matter with signal success. The honourable Member did not produce to the committee a case in which people entitled to sanatorium accommodation were without it. He said that he could, but he did not. The Order was issued, as a matter of fact, only ten days after the date when it should have been issued. That was due to no fault of the Local Government Board, but to the fact that negotiations had to be undertaken at the last moment between the Local Government Board, the Insurance Commissioners, and the committees. Months before it was issued (July 26th), and during the time when the honourable Member's own committee was sitting, the Local Government Board, the London County Council, the Metropolitan Asylums Board, and all the other authorities had made arrangements in anticipation of sanatoria being provided as from July 15th onwards. They had really done a great deal of devoted and able work in trying to provide sanatoria. He could only say, so far as the Local Government Board was concerned these facts were an answer to much of the idle criticism and factious talk of which too much had been heard. It was no small thing to have provided since July last 208 sanatoria with 7500 beds. It was no small thing to have secured 192 dispensaries which, like sanatoria, were attending to thousands of people. It was no small achievement that the local authorities, whom he wished to defend in this matter, should, as regarded 49 out of 62 county councils, 66 out of 75 county boroughs, and in 25 metropolitan boroughs, have submitted and got into working order provisional schemes for tuberculosis sanatoria and dispensaries, and that, generally speaking, at this moment there was a margin of beds for those who required them. When the honourable Member twitted the Local Government Board with dilatoriness all he (Mr. Burns) could say was that the Board had got ample justification for all that it had done. He had only to quote Paragraphs 24 and 34 of the honourable Member's own report to plead not an excuse but an ample defence for all it had done. Paragraph 24 was as follows: "As regards London, it seems desirable to the committee that it should be considered whether some of the sanatoria hospitals required should not be provided by the Metropolitan Asylums Board, and whether dispensaries should not be provided by the Metropolitan borough councils." In the light of that report, instead of wasting his (Mr. Burns's) time and that of his officers, he knew what every Londoner knew, that on July 15th there were anything from 800 to 1500 empty beds in the possession of the Metropolitan Asylums Board, one of the best infectious hospital authorities in the world. It would have been the grossest folly and the greatest extravagance with the ratepayers' money for him to have thrown upon the rates and taxes the provision of surplus beds and surplus sanatoria when beds were vacant and the institutions were almost derelict for lack of patients. The result was that long before the honourable Member's report was issued he went to the Metropolitan Asylums Board. The County Council was agreeable and the Local Government Board assented, and he was glad to say that at Downs and Winchmore Hill sanatoria hundreds of men and women were receiving the best sanatorium treatment which it was possible to give them. He had been with his officers to see them. He had not received one single complaint about the method of treatment, and he was delighted to say that tuberculous insured persons in the London sanatoria, thanks to the public spirit of the Metropolitan Asylums Board, had been provided with sanatorium treatment, of which not a single complaint had been made, and to which no criticism could fairly be directed. If honourable Members doubted what he said let them go and see for themselves, and he was certain that their inspection would bear out what he said. Replying to Mr. Long, the right honourable gentleman said that he was not in favour of solving the housing problem by a system of doles to certain privileged persons, such as landlords, farmers, and local authorities. He was glad to say that the local authorities were in increasing numbers responding to his representations in regard to housing. The housing difficulty in London arose less from the want of houses than from low wages. If the wages of unskilled labourers were adequate nine-tenths of the housing problem would be solved. He had spent much time in speeding up the housing question in rural areas. In the last two years he had sanctioned three times more loans for rural housing than were sanctioned by his predecessors in the previous 22 years. If time permitted he could give ample evidence of the great progress made in housing and town planning schemes by the Board. The Government had not said their final word as to how urban and rural housing should proceed. The matter was now before the Committee on the Re-adjustment of Local Taxation. When the committee reported, the House would find that a Government which had done so much for social reform in the last six years would deal seriously and boldly with the housing problem.

The amendment to reduce the vote by £100 was defeated by 255 votes to 178.

MONDAY, JUNE 16TH.

Medical Aid Societies and the National Insurance Act.

In reply to Sir J. D. REES, Mr. MASTERMAN said: The Insurance Committees have in a few instances allowed bodies of insured persons to make their own arrangements with medical aid societies attached to certain works in South Wales. Under these circumstances the Insurance Committees propose to make a contribution to the cost of providing medical attendance for the insured in conformity with Section 15, Subsection 3 of the Insurance Act and Section 49 of the Regulations with respect to the administration of medical benefit. The sum contributed by the Insurance Committee will in no case be greater than the amount for which the medical society undertakes the treatment of the insured person. The payment made in respect of dependents is not within the purview of the Insurance Committee.

Medical Benefit and Travelling Insured Persons.

Mr. NEWTON asked the Secretary to the Treasury what arrangements, if any, had been made to enable an insured person who was compelled at a few hours' notice to leave the area in which his usual place of residence was situated in order to go into some other area in connexion with his work, and who was taken ill upon his arrival in that area, to secure the medical attention for which he had paid.—Mr. MASTERMAN answered: Arrangements have been made whereby in the exceptional circumstances referred to the insured person can be furnished with a voucher entitling him to medical attendance from a doctor on the panel in the place in which he is taken ill.

The Pembrokeshire Insurance Committee and Sanatorium Benefit.

Mr. FRED HALL (Dulwich) asked the Secretary to the Treasury whether the Pembrokeshire Insurance Committee had been paying £14 a week a patient to the Welsh National Memorial Association for the treatment of insured persons for tuberculosis; what was the total number of insured tuberculosis patients in the county; and what was the estimated income of the Committee for this class of benefit during the present year.—Mr. MASTERMAN replied: The committee referred to has not entered into an agreement for the payment of £14 or any other sum per patient per week to the Welsh National Memorial Association, but like all other Insurance Committees in Wales is contributing for the present at the rate of 9d. per insured person per annum towards a comprehensive scheme for the institutional treatment of all classes of tuberculous patients. The number of insured tuberculous patients in the county at present is 20, and the estimated annual income of the Committee in respect of sanatorium benefit is £1196.

Sanatorium Benefit in Ireland.

Mr. MASTERMAN informed Mr. Lundon that Insurance Committees in Ireland had power under the National Insurance Act to extend sanatorium benefit to the dependents of insured persons, and in Ireland it was further open to a county council under the Tuberculosis Prevention (Ireland) Acts, 1908 and 1913, to provide treatment for all the inhabitants, insured or uninsured, of their county who might be suffering from tuberculosis.

TUESDAY, JUNE 17TH.

Supervision of Tuberculosis in Scotland.

Mr. JAMES HOGGE asked the Secretary for Scotland whether the local public authorities in Scotland were subject to the Public Health

Acts, whereby they were responsible for the supervision, management, and isolation of infectious diseases; whether this applied to tuberculosis in so far as it was an infectious disease; and, if so, whether they were responsible for such cases whether they were insured persons or not.—Mr. MCKINNON WOOD replied: The general responsibilities of the local authorities under the Public Health (Scotland) Acts regarding the treatment of infectious diseases extend to tuberculosis in so far as it is an infectious disease, whether the cases are those of insured persons or not.

Scottish County Councils and Treatment of Tuberculosis.

Mr. JAMES HOGGE asked the Secretary to the Treasury how many county councils in Scotland had refused to meet the deficit in the circumstances detailed under Section 7 of the National Insurance Act in connexion with the treatment of tuberculosis.—Mr. MASTERMAN said in reply: Only one county council in Scotland has refused to accept responsibility for sharing with the Treasury half of any expenditure on the treatment of insured persons and dependents over and above what is provided for this purpose from the National Health Insurance Fund.

Mr. HOGGE asked the Secretary for Scotland whether the Local Government Board had distributed any of the money grant towards the capital expenditure of sanatoria to any county council in Scotland under Section 64 of the National Insurance Act; and, if so, how much and to which councils.—Mr. MCKINNON WOOD answered: No portion of the capital grant has yet been distributed. Before distributing any portion of the grant the Board require that a complete scheme for dealing with tuberculosis should be submitted to them. For various reasons no council either of a county or of one of the larger burghs has yet been able to submit a complete scheme, but the councils are actively engaged on the preparatory work and are in consultation with the Board. The Board are urging them to expedite the work so that schemes may be submitted for final approval as soon as possible.

Mental Deficiency (Scotland) Bill.

Replying to Mr. FREDERICK WHYTE, Mr. MCKINNON WOOD wrote: The Mental Deficiency and Lunacy (Scotland) Bill contemplates that a defective child, like any other child, should remain at home under the guardianship of his parents and be educated or trained with the assistance of the School Board when required. No child may be removed to other guardianship or to a special institution without the consent of the parents, except under a judicial order, which will insure full consideration of every reasonable objection on the part of the parent. Resort to this procedure should in practice be very exceptional, but there are special circumstances in which such a procedure may be necessary in the interest of the child.

WEDNESDAY, JUNE 18TH.

Grants for the Prevention of Tropical Diseases.

In reply to Mr. MACKINDER, Mr. L. HARCOURT, Secretary of State for the Colonies) said: At the present time His Majesty's Government makes direct grants of £3500 a year for the prevention of tropical diseases. The grant is allocated as follows:—£1000 each to the Tropical Diseases Research Fund, the Tropical Diseases Bureau, and the Entomological Research Committee, and £500 to the Imperial Bureau of Entomology.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BICE, FRANK VEALE, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Scattered Homes by the St. Colomb (Cornwall) Board of Guardians.

BROOKS, GERTRUDE, M.B., B.S. Lond., has been appointed Assistant Anæsthetist to the Chelsea Hospital for Women.

CRAIG, STANLEY D., M.B., Ch.B. St. And., has been appointed Surgeon to the Stockton and Thornaby Hospital.

FRENCH, HERBERT, M.D. Oxon., F.R.C.P. Lond., has been appointed Examiner in Medicine to the Society of Apothecaries, London.

GALLOWAY, A. F., M.D. Glasg., has been appointed Medical Examiner for Accident Claims to the Norwich Union Fire Insurance Society.

GREEVES, R. AFFLECK, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to the Eye Department at the Paddington Green Children's Hospital.

MACINTYRE, HUGH, M.B. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for the Dunoon and Inveraray District of the Sheriffdom of Argyll.

MILLER, THOMAS, M.B. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for the Dumbarton District of the Sheriffdom of Stirling, Dumbarton, and Clackmannan.

MURRAY, H. LEITH, M.D. Aberd., has been appointed Honorary Assistant Surgeon to the Hospital for Women, Liverpool.

NAIRN, CUTHBERT, M.B. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for the Greenock District of the Sheriffdom of Renfrew and Bute.

ROWNTREE, CECIL, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Dreadnought Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN UNIVERSITY.—Examiners.

ABERYSTWYTH INFIRMARY AND CARDIGANSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £130 per annum, with board and washing.

ALTON, HANTS, LORD MAYOR TRELOAR CRIPPLES' HOSPITAL.—Assistant Resident Medical Officer for six months. Salary at rate of £100 per annum, with board and lodging.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £100 per annum, with board and residence.

BERMONDSEY MEDICAL MISSION.—Female Locum Tenens Assistant for two months.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House Surgeon. Salary £75 per annum, with board, rooms, &c.

BIRMINGHAM, JAFFRAY BRANCH OF THE GENERAL HOSPITAL, Gravelly Hill.—Resident Medical and Surgical Officer. Salary £150 per annum, with board, residence, and washing.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon for six months, unmarried. Salary £80 per annum, with board, lodging, and washing.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

CAMBERWELL INFIRMARY, Brunswick-square, and GORDON-ROAD WORKHOUSE, Peckham.—Second Assistant Medical Officer. Salary £150 per annum. Also Third Assistant Medical Officer for the Infirmary. Salary £140 per annum. Also Junior Assistant Medical Officer. Salary £110 per annum. Each with apartments, board, and washing.

CANCER HOSPITAL, Fulham-road, London, S.W.—Senior and Junior House Surgeons for six months. Salaries £80 and £70 per annum respectively.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £160 per annum, with board, lodging, washing, and attendance.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Senior House Surgeon and Junior House Surgeon, unmarried. Salaries £100 and £90 per annum respectively, with board, lodging, and washing.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Junior Assistant Medical Officer, unmarried. Salary £220 per annum, with apartments, attendance, laundry, &c.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CARDIFF, UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Lecturer in Histology and Embryology. Salary £200 per annum.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, lodging, and washing.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £90 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistants in the Out-patient Department.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—House Physician and Junior House Surgeon. Salary £90 per annum each, with residence, board, and laundry.

CUMBERLAND COUNTY COUNCIL.—Tuberculosis Officer. Salary £350 per annum.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—First Assistant Medical Officer and Second Assistant Medical Officer. Salary £275 and £175 per annum respectively, with apartments, board, attendance, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried. Salary at rate of £75 per annum, with board and laundry.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

DORSET COUNTY COUNCIL EDUCATION COMMITTEE.—Dental Surgeon. Salary at rate of £260 per annum.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

DURHAM COUNTY ASYLUM.—Third and Fourth Assistant Medical Officers, unmarried. Salary £180 each, with board, lodging, and washing.

EASTBOURNE, PRINCESS ALICE MEMORIAL HOSPITAL.—Honorary Radiologist.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Surgeon for five months. Salary at rate of £75 per annum, with board, residence, and washing. Also House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing. Also Clinical Assistants in the Out-patient Departments.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of 100 guineas per annum, with board, apartments, and washing.

GLASGOW, VICTORIA INFIRMARY.—Director of Clinical Research Laboratory and Pathological Department. Salary £350 per annum.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GRIMSBY AND DISTRICT HOSPITAL.—Locum Tenens as House Surgeon.

GUY'S HOSPITAL.—Honorary Senior Medical Radiographer.

GUY'S HOSPITAL MEDICAL SCHOOL.—Lecturer in Pharmacology. Salary £300 per annum.

HALIFAX EDUCATION COMMITTEE.—School Medical Officer. Salary £300 per annum.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Resident Casualty Officer for Camden Town Out-patients' Department. Salary £140 per annum, with board, residence, and laundry.

HITCHIN, THREE COUNTIES ASYLUM.—Junior Assistant Medical Officer. Salary £170 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR EPILEPSY AND PARALYSIS, &c., Maida Vale, W.—Honorary Radiographer.

HOSPITAL FOR WOMEN, Soho-square, W.—Pathologist and Registrar. Salary £100 per annum.

INDIAN MEDICAL SERVICE.—Twelve Commissions.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—House Physician and Second House Surgeon. Salary £80 per annum each, with board, residence, and laundry.

KENT EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £250 per annum.

LANCASHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

LANCASTER, COUNTY ASYLUM.—Assistant Medical Officer. Salary £200 per annum, with board, apartments, washing, and attendance.

LICHFIELD, COUNTY MENTAL HOSPITAL, Burntwood.—Junior Assistant Medical Officer, unmarried. Salary £210 per annum, with apartments, board, and washing.

LINCOLN MENTAL HOSPITAL, The Lawn, Lincoln.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, &c.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—Honorary Assistant Surgeon.

LIVERPOOL STANLEY HOSPITAL.—Two House Physicians. Salary £75 per annum each, with board, residence, and laundry.

LIVERPOOL UNIVERSITY FACULTY OF MEDICINE.—Walter Myers Chair of Parasitology. Salary £600 per annum.

LONDON HOSPITAL, Whitechapel-road, E.—First Assistant to Dr. James Mackenzie in the Cardiac Department for six months. Salary at rate of £300 per annum. Also Physician and Assistant Physician.

LONDON LOCK HOSPITAL.—FEMALE HOSPITAL: House Surgeon and Assistant House Surgeon. Salary £100 and £80 per annum respectively, with board, lodging, and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Honorary Assistant Anæsthetist.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Honorary Assistant Physician.

MANCHESTER WORKHOUSE, Crumpsall.—Junior Resident Assistant Medical Officer, unmarried. Salary £110 per annum, with rations, apartments, fire, light, washing, and attendance.

MEDICAL MISSION HOSPITAL AND DISPENSARY, Balaam-street, Plaistow, E.—Female Senior Resident Medical Officer. Salary £100 per annum and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—House Physician. Salary £75 per annum, with board, residence, and washing.

NORTHAMPTON, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £300 per annum.

OLDHAM COUNTY BOROUGH.—Assistant Schools Medical Officer. Salary £280 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PORTSMOUTH BOROUGH MUNICIPAL TUBERCULOSIS DISPENSARY.—Assistant Medical Officer. Salary at rate of £250 per annum.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

PRESTON, COUNTY ASYLUM, Whittingham.—Assistant Medical Officer unmarried. Salary £200 per annum, with board, apartments, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, residence, washing, &c.

ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL.—Resident House Physician. Salary at rate of £110 per annum, with board, residence, and laundry.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester-square.—Joint Afternoon House Anæsthetist. Salary £24 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Senior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

ST. HELENS, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £550 per annum.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Resident Medical Officer. Salary £150 per annum, with apartments, attendance, &c.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

ST. PANCRAS DISPENSARY, 39, Oakley-square, N.W.—Resident Medical Officer, unmarried. Salary £105 per annum, with residence and attendance.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and lodging.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Assistant Medical Registrar for six months.

SHEFFIELD CHILDREN'S HOSPITAL.—House Surgeon. Salary £85 per annum, with board and residence.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £80 per annum, with rooms, board, and washing.

SOUTH SHIELDS EDUCATION AUTHORITY.—Assistant School Medical Officer. Salary £250 per annum.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

STIRLING DISTRICT ASYLUM, Larbert.—Junior Assistant Medical Officer. Salary £150 per annum, with board, lodging, and laundry.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Honorary Assistant Surgeon. Also House Surgeon. Salary £100 per annum, with apartments, board, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician and Two Junior House Surgeons. Salaries £80 per annum, with board, residence, and laundry.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, lodging, and laundry.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board and residence.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea.—Pathologist. Salary £105 per annum, with lunch.

WANDSWORTH UNION INFIRMARY, St. John's Hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried, for six months. Salary at rate of £120 per annum, with board, lodging, and washing.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and washing.

WARWICK ASYLUM.—Assistant Medical Officer, unmarried. Salary £175 per annum, with board, residence, and laundry.

WEST AFRICAN MEDICAL STAFF.—Appointments. Salary £400 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Resident House Physician for six months. Salary at rate of £100 per annum.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Physician and Junior House Physician. Salary of former £100 per annum and of latter £75 per annum, with board-residence. Also Honorary Radiographer.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants for three months.

WESTMINSTER HOSPITAL.—Resident Obstetric Assistant for six months. Board and lodging provided.

WESTMORLAND CONSUMPTION SANATORIUM AND HOME, Meathop, Grange-over-Sands.—Second Assistant Medical Officer. Salary £150 per annum, with board and laundry.

WEST RIDING OF YORKSHIRE.—Tuberculosis Officer. Salary £400 per annum.

WEST SUSSEX COUNTY COUNCIL.—Tuberculosis Officer. Salary £500 per annum.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, rooms, and laundry.

WORCESTER GENERAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and washing.

YORK, NORTH RIDING ASYLUM, Clifton.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, washing, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Gloucester, in the county of Gloucester.

Births, Marriages, and Deaths.

BIRTHS.

BROOKES.—On June 14th, at West Ealing, the wife of Claud Brookes, M.B., F.R.C.S. Edin., of a son.

COOKE.—On June 10th, at Clodiagh, Stanmore, the wife of Douglas Cooke, F.R.C.S., of a daughter.

TURNBULL.—On June 14th, at Severalls House, Colchester, the wife of R. C. Turnbull, M.B., of a daughter.

MARRIAGES.

CHASTEL DE BOINVILLE—PYEMONT.—On June 10th, at St. Anne's Church, Aigburth, Liverpool, Vivian Chastel de Boinville, M.D., to Norah Margaret, youngest daughter of Frederick Pyemont Pyemont, of Liverpool.

WINGFIELD—PATERSON.—On June 14th, at St. Philip's Church, Earl's Court-road, Rodolph Charles Wingfield, M.B., to Isabel Rose, eldest surviving daughter of the late Donald Paterson, of Miltown, Culloden, and of Mrs. Paterson, of Chilcomb, Loch Alsh-road, Inverness, N.B.

DEATHS.

EGAN.—On June 7th, at Baldock, Hertfordshire, Clement Aloysius Whittington Egan L.S.A., aged 46 years, youngest son of the late Richard Whittington Egan, M.D., of Dublin.

LAWRENCE-HAMILTON.—On June 13th, at Sussex-square, Brighton, suddenly, of heart failure, Julius Lawrence-Hamilton, M.R.C.S., in his 69th year.

THOMAS.—On June 10th, after a short illness, the result of an accident, John Lewis Thomas, M.D., J.P. for the county of Southampton, aged 66 years.

TILLY.—On June 12th, at Manor-road, Teddington, Alfred Tilly, Surgeon, aged 59 years.

WALLACE.—On June 14th, at The Manor House, Uppingham, suddenly, Frederick Wallace, M.R.C.S. Eng., L.R.C.P. Lond.

WHISTLER.—On June 10th, at Clearmount, Broadwey, the Rev. Charles Watts Whistler, B.A., M.R.C.S., L.S.A., aged 56 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE SCARCITY OF LOCUM-TENENTS.

To the Editor of THE LANCET.

SIR,—May I through your columns call attention to one perhaps unforeseen result of the Insurance Act. In their anxiety to induce sufficient men to go on the panel, unnecessarily liberal offers were made by the Insurance Commissioners to locum-tenents and others to induce them to take up the work of the Act, and we are now faced with a dearth of suitable men to relieve the practitioner when he takes his annual holiday.

Owing to this scarcity prices have risen and the fee for a reliable substitute is now 5 guineas a week and sometimes more. The enormous amount of extra work thrown on the profession by the Act has also caused an increase in the demand for help.

Members of the profession who think that the present shortage affords a good opportunity for pressing for even higher fees are not really doing service either to those who habitually take locum-tenencies or to the newly qualified men who in this way gain valuable insight into private practice.

I am, Sir, yours faithfully,

PERCIVAL TURNER.

Adam-street, Adelphi, W.C., June 16th, 1913.

A QUAINT MISPRINT.

THE *Poor-law Officers' Journal* appears to have addressed communications to boards of guardians inviting them to combine in testifying their appreciation of the work of Mr. John Burns as President of the Local Government Board. The chairman of the Fulham board of guardians, in advising the board not to take any part in the proposed testimonial, expressed his personal admiration for Mr. Burns, but was credited in the report of the proceedings which appeared in the *Daily Telegraph* with an attribution of virtue to the right honourable gentleman for which the compositor, or possibly the reporter, must be held responsible. Mr. Propert can hardly have said of the President of the Local Government Board not only that he had been able and industrious in his office, but also that he "had refused to allow the advanced Reform party to sweep gardens out of existence." The iconoclastic zeal of the Poor-law reformer is directed against guardians rather than gardens. The Fulham board of guardians declined unanimously to take part in the matter referred to.

VITAL STATISTICS OF GIBRALTAR.

ACCORDING to the annual Blue-Book of the Colony the civil population of Gibraltar on Dec. 31st, 1912, numbered 18,446 (8855 males and 9591 females), while the military population (including 888 females) was returned as 5125. The general or crude death-rate per 1000 persons living in 1912 was 15·5, as compared with 16 in 1911 and 18 in 1910. The mean temperature for the year was 62·9° F., the absolute maximum being 91·0° on August 13th and 42·2° on Nov. 15th. The rainfall for the year was 29·96 inches as against 34·90 inches in 1911. It is also interesting to note that the average rainfall over a period of 115 years has been 33·33 inches. The daily average number of patients in 1912 under treatment in the Colonial Hospital was 49 (39 males and 10 females). The total number treated, including those (53) remaining in the hospital at the end of the previous year, was 638 (494 males and 144 females); the number remaining at the end of the year was 98. The number of important surgical operations performed was 250. Of those who underwent operation only two died. The total number of deaths in the hospital was 37. The number of out-patients treated was 6261. In the small-pox hospitals 16 patients were treated, of whom three died; neither of these three had been vaccinated since infancy. The net cost of maintenance of the hospitals amounted to £110 10s. 3d. per bed. A tuberculosis dispensary, to which the Colonial Government contributed a sum of £625, was opened at the beginning of the year and is under the management of the Sanitary Commissioners. During the year 180 patients passed through the dispensary for inspection and treatment. The working scheme is based largely on the Edinburgh system, Sir R. W. Philip, Dr. W. L. Lyall, and others having courteously placed the working of that system and other matters at the disposal of the medical officer of health of the Sanitary Commissioners. Patients are visited at their homes and advised as to their mode of life and the best means of protecting other members of the family from infection. Where the rooms in which they live are unsuitable by reason of being shut in and dark, patients are advised to seek more suitable accommodation, and in case of need receive financial assistance to enable them to do so. The commissioners also are the landlords of a house capable of receiving ten families. Besides giving advice to patients, some 16,000 pints of milk and 4000 lb. of beef have been distributed during the year. There are also three salaried medical officers whose duty it is to visit the sick poor in their houses and afford them gratuitous medical treatment. The daily average number of patients in the lunatic asylum was 33, and there were 4 deaths. The average cost per patient was £54 5s. 9d. The average age of the male inmates was 49, that of the female 53. The patient who has been for the longest time an inmate of the asylum is a deaf mute (male), 69 years of age, who was admitted in 1880. Serious crimes on the part of the inhabitants of Gibraltar are rare. On Dec. 31st, 1912, there were but 15 persons in prison, of whom only 5 were natives of the colony.

DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

To the Editor of THE LANCET.

SIR,—May I appeal through your columns to all former residents at this hospital on the occasion of the retirement of the secretary and superintendent, Mr. J. Unsworth?

For the long period of 44 years Mr. Unsworth has devoted his energies to the service of the hospital, and throughout that time he has maintained the most cordial relationships with successive members of the resident staff, has helped them in many details of their work, and made their term of office more agreeable in every way in his power.

I feel sure that all of them will welcome the opportunity of marking their appreciation of his valuable services, and shall be glad to receive their donations towards a presentation to him on his retirement.

I am, Sir, yours faithfully,

GEORGE C. E. SIMPSON, F.R.C.S. Eng.,
Honorary Secretary, the Medical Board.

21, Rodney-street, Liverpool, June 12th, 1913.

THE THALAMIC SYNDROME.

"Vermis" writes:—"What are the signs of the 'thalamic syndrome,' and have these any relation to blockage of the post-inferior cerebellar artery? In what easily accessible text-book are such dealt with?"

*** A useful account of the matters inquired of by our correspondent can be found in Osler and Macrae's "System of Medicine," Vol. VII., pp. 294–296, and p. 304. The thalamic syndrome is described as consisting of a persistent partial hemianæsthesia, slight hemiplegia, ataxia, and astereognosis of the contralateral half of the body, pains, and choreic and athetotic movements of the hemiplegic side, though all of these are not, as a rule, present in any given case. A comparison of these conditions with those induced by blockage of the posterior inferior cerebellar artery will show marked differences.—ED. L.

THE CRUISE OF THE MIDGE.

To the Editor of THE LANCET.

SIR,—"A Victimised Chemist" in THE LANCET of May 31st, p. 1571, asks for advice on the subject of midge-bites.

In reply, I would refer him to "Pharmaceutical Formulas," by P. MacEwan, published at the office of the *Chemist and Druggist*, where he will find several good prescriptions for this purpose. Formic acid being the active ingredient in the poison of most stinging insects this is best neutralised by rubbing into the skin an ammoniacal lotion made up with spirit, seeing that water does not penetrate the skin. Lin. camph. ammoniatum B.P., diluted with an equal quantity of lin. saponis, so as not to be too strong, forms a good application for this purpose, and if the liniments are made up with methylated spirit, as they may be, the prescription will not be expensive. Then the classical remedy to keep such insects from alighting on the skin is oil of penny-royal, which annoys them by its smell, while tincture of wormwood (1 in 8) rubbed into the skin keeps them from biting if they settle. All these ingredients may be usefully combined into one prescription, like the following, which I lately prescribed for a relative with great success. It should be rubbed into the wrists and neck as a preventive before going out, or into the bites, when inflicted, in order to allay the itching. ℞ Ol. pulegii ʒ ss, tinct. absinthii ʒ iii., lin. saponis, lin. camph. ammon. āā pt. æq. ad ℥ iii. M. et ft. linimentum. Aqueous solutions give very little relief.

There are several other good applications for the same purpose described in the work referred to.—I am, Sir, yours faithfully,

June 13th, 1913. J. B. N.

THE EDINBURGH MEDICAL MISSION HOSPITAL AT NAZARETH.

Dr. F. J. Scrimgeour says in a short statement of last year's work in the Hospital of the Edinburgh Medical Mission Society at Nazareth, that Nazareth, which is the market town of a region of Galilee and is surrounded by many villages, has a population of about 11,000. The Edinburgh Medical Mission was established in 1866, but the hospital was opened only eight years ago. The patients are all Syrians and Arabs, half of them Moslems, the remainder belonging to the various eastern communions. A small payment is required except in the case of the very poor. The hospital contains two male and two female wards and a children's ward, with a total of 26 beds. The nursing staff of two is assisted by Syrian girls in training, who receive a three years' course of instruction, which includes lectures

and examinations, with a certificate of proficiency on passing the final examination. A course of practical midwifery has also been established. In the year ending Nov. 11th, 1912, there were 9799 attendances at the dispensary, 1153 visits to patients at their homes, 563 in-patients, 759 operations, 114 dental extractions, and 46 confinements. Special efforts are being made to raise funds for the erection of a permanent hospital building to replace the present rented native house.

CARDIOGRAPHIC APPARATUS.

THE advances made in the application of electrical methods to the study of the heart are well illustrated in a catalogue (No. 107) of electro-cardiographic apparatus recently issued by the Cambridge Scientific Instrument Company, Limited. The component parts of the complete outfits are described in detail and their function explained. The principal parts are as follows: A galvanometer, the string of which receives the electrical impulses of the heart; a camera (plate) to record the movements of the string due to those impulses; an arc lantern to illuminate the string; a control board to enable all the necessary electrical tests and adjustments to be made; a time-marker to show the plate speed (either rotatory or vibratory type); a table to support the foregoing apparatus and the switches required for controlling the arc lantern, galvanometer field, time-marker, and, if necessary, a paper camera motor; and a set of electrodes to make good electrical connexions to the patient. A phonocardiograph is also provided, and special arrangements are made for hospital installations by which records may be taken from a number of different points. This is, of course, necessary when it is inadmissible to move patients from the ward to the galvanometer room.

Yorks.—The annotation in THE LANCET of May 3rd made it clear that the Royal College of Physicians of London no longer wishes to restrain its Licentiates from assuming the courtesy title of "doctor" on plate or visiting card.

Clavus (a medical practitioner) asks whether any reader of THE LANCET can recommend a satisfactory work on chiropody.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Dr. G. J. Burch: On Light Sensations and the Theory of Forced Vibrations.—Mr. P. W. Burbidge: The Fluctuation in the Ionisation Due to γ Rays (communicated by Sir Joseph Larmor).—Mr. J. G. Leathem: On the Force Exerted on a Magnetic Particle by a Varying Electric Field (communicated by Sir Joseph Larmor).—Mr. W. Watson: On the Luminosity Curve of a Colour-blind Observer.—Prof. W. M. Hicks: A Critical Study of Spectral Series. Part III., The Atomic Weight Term, and its Import in the Constitution of Spectra.—Mr. L. C. Martin: A Band Spectrum attributed to Carbon Monosulphide (communicated by Prof. A. Fowler).—Mr. F. S. Phillips: Phosphorescence of Mercury Vapour After Removal of the Exciting Light (communicated by Hon. R. J. Strutt).—And other papers.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. A. M. H. Gray: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. D. Grant: Some Disorders of the Singing Voice.

TUESDAY.—4 P.M., Dr. W. J. Fenton: Clinique (Medical). 5.15 P.M., Lecture:—Mr. H. Barwell: Examination of the Throat and Nose.

WEDNESDAY.—4 P.M., Mr. S. Handley: Clinique (Surgical). 5.15 P.M. Lecture:—Dr. A. Morison: On Sensory Disorders of the Heart.

THURSDAY.—4 P.M., Mr. L. Evans: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. R. Hutchison: Fevers of Obscure Origin.

FRIDAY.—4 P.M., Sir StClair Thomson: Clinique (Ear, Nose, and Throat.) 5.15 P.M., Dr. W. Wingrave: Vaccines.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Pardoe: Clinical, on Urinary Surgery.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Clinical, on Urinary Surgery.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Pardoe: Clinical, on Urinary Surgery.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Ll. Williams: Oral Sepsis.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Dr. Owen: Demonstration at Victoria Park Hospital. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Mr. Ll. Williams: Oral Sepsis.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.15 P.M., Sir Malcolm Morris: Skin.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Surgical. 11 A.M., Mr. R. H. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. Dr. A. Davies: Pathological Demonstration. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. 3.15 P.M., Dr. R. Wells: Medicine.

FRIDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford: Medicine. 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Surgical. 11 A.M., Mr. R. H. Bickerton: Eye.—10 A.M., Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. B. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. B. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Lecture:—Dr. B. Shaw: On the "Controlled" Reactionless Use of New Tuberculin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY AND FRIDAY.—3.30 P.M., Clinical Lectures:—Mr. G. Stewart: Spinal Localisation.

QUEEN'S HOSPITAL FOR CHILDREN, Board Room of the Hospital, Hackney-road, N.E.

THURSDAY.—4 P.M., Mr. J. H. Connolly: Clinical Demonstration of Ear, Nose, and Throat Cases.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), London Hospital, Mile End-road, E.

Course of Lectures on the Psychoses and Neuroses of Children:—

THURSDAY.—2 P.M., Dr. F. Warner: Nervous Children.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., A Demonstration of Medical and Surgical Cases will be given by the Honorary Staff. (Post-Graduate Clinic.)

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: The Management of the Puerperium (continued). 11 A.M., Examination of Patients and Minor Operations.
TUESDAY.—10 A.M., Major Operations. 4 P.M., Class in Gynæcological Diagnosis.
WEDNESDAY.—10 A.M., Obstetrical Lecture: The Mechanism of Labour. 11 A.M., Examination of Patients and Minor Operations.
THURSDAY.—10 A.M., Major Operations.
FRIDAY.—10 A.M., Gynæcological Lecture: Uterine Displacements (continued). 11 A.M., Examination of Patients and Minor Operations. 4 P.M., Class in Gynæcological Diagnosis.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

April 26th–Nov. 5th (Ghent).—International Exhibition.
May 31st to October (London, Earl's Court).—Imperial Services Exhibition.
May–October (Leipzig).—First International Building Exhibition.
June 11th (opened) (London, Crystal Palace).—Anglo-German Exhibition.
,, 24th (opens) (London).—Historical Medical Museum. (Organised by Mr. Henry S. Wellcome.)
,, 24th–27th (London, Ontario).—Canadian Medical Association.
,, 26th–28th (Oxford).—Fourth Annual Conference of the British Hospitals Association.
,, 27th (London, Inns of Court Hotel).—Conference of the Pure Food and Health Society of Great Britain.
,, 30th and July 1st (London, Guildhall).—Conference on Diet, Cookery, and Hygiene in Elementary Schools and Institutions.
July 7th–12th (Exeter).—Twenty-eighth Congress of the Royal Sanitary Institute.
,, 16th–18th (Oxford, Keble College).—Oxford Ophthalmological Congress.
,, 18th–25th (London).—Imperial Motor Transport Conference.
,, 21st–24th (London).—British Pharmaceutical Conference.
,, 22nd–25th (Brighton).—Eighty-first Annual Meeting of the British Medical Association.
,, 16th and 17th (Minneapolis).—Fifteenth Annual Meeting of the American Proctologic Society.
,, 17th–20th (Minneapolis).—American Medical Association.
Aug. 1st–3rd (Ghent).—Congress against the Adulteration and Deterioration of Foodstuffs.
,, 1st–5th (Brussels).—Third International Conference on Cancer.
,, 3rd–8th (London).—Sixth International Dental Congress.
,, 4th and 5th (London, Caxton Hall).—English-speaking Conference on Infant Mortality.
,, 6th–12th.—(London).—Seventeenth International Congress of Medicine.
,, 20th–26th (Ghent).—Third International Congress of Neurology and Psychiatry.
,, 25th–30th (Buffalo).—Fourth International Congress of School Hygiene.
,, 31st–Sept. 7th (Antwerp).—Fourth International Congress for the Hygiene and Salubrity of Dwellings.
Sept. 2nd–6th (Groningen).—International Physiological Congress.
,, 9th–13th (Vienna).—Second International Congress of Life Saving and Prevention of Accidents.
,, 10th–17th (Birmingham).—British Association.
,, 21st–26th (Vienna).—Eighty-fifth Meeting of German Natural Philosophers and Physicians.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 18th, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 12	30·08	W.	...	102	66	53	52	58	Cloudy
,, 13	30·14	W.	...	101	64	54	55	59	Cloudy
,, 14	30·37	E.	...	111	69	56	54	59	Cloudy
,, 15	30·25	S.E.	...	123	76	54	57	63	Fine
,, 16	30·11	S.E.	...	126	84	55	61	66	Fine
,, 17	30·00	S.	...	127	85	63	63	68	Hazy
,, 18	30·02	S.W.	...	118	77	56	58	63	Cloudy

The following journals, magazines, &c., have been received:—Royal Army Medical Corps Journal, American Journal of Surgery, Archives de Médecine et de Pharmacie Militaires, Dublin Journal of Medical Science, La Clinique Ophtalmologique, Annali di Medicina Navale e Coloniale, Midland Medical Journal, South African Medical Record, Revue de Médecine, Revue de Chirurgie, American Journal of Clinical Medicine, Therapist, Pediatrics, Indian Medical Journal, International Journal of Surgery, Revue Scientifique, Medical Review of Reviews (New York), Archives Internationales de Neurologie, St. Paul Medical Journal, Archives of Diagnosis, Symons's Meteorological Magazine, Man, &c.

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